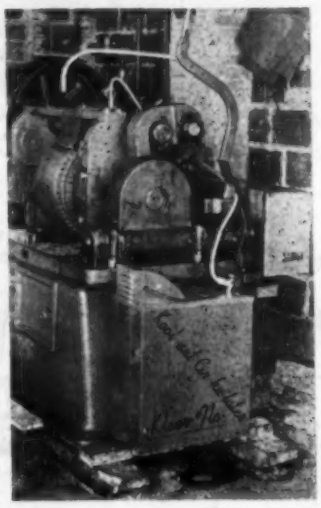
MAR 13 1944
DETROIT

NEW EQUIPMENT DIGEST

EQUIPMENT • IMPROVEMENTS • PROCESSES • MATERIALS • METHODS • APPLICATIONS • LITERATURE

Vol. 9 · March, 1944 · No. 3

COOLANT SYSTEM



Adaptable to any machine, Cool-Ant Cir-ku-Lators provide ample flow of coolant or cutting oil for wet machining and wet grinding operations. Completely self-contained, unit consists of 8-gallon 20-gage steel cabinet, 110 or 220-volt 60-cycle motor driving open impeller type circulating pump, renewable filter and 5 feet of ⅜-inch hose for applying coolant to work. Pump has capacity of 75 gallons of SAE 10 or lighter oil per hour. Chips or grit cannot clog pump. Flow can be regulated to any desired quantity by regulator valve. Distributed by Kleer-Flo Distributors, Inc., 250 W. Fifty-seventh St., New York, N. Y.

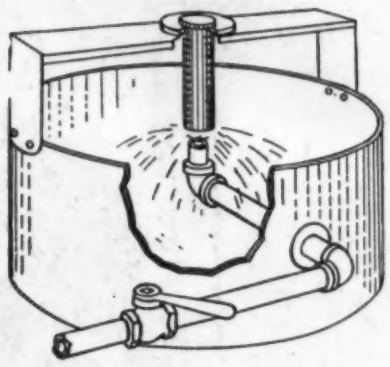
▲ Mention Item NED-1195-A when writing ▲

WIRE ROPE CLAMPS

Formerly available only in nine sizes, Safe-Line wire rope clamps are now made in 13 sizes ranging from 1/16 to ¾-inch diameter cable sizes. New small sizes were added to permit use on aircraft and boats. Feature of these easily attached and removeable clamps is precision inside grooving of forged and coined clamping halves which pocket and grip large spiral strands of wire rope. Large grooves prevent end-wise slippage and smaller grooves prevent rope from spiral-winding out of clamp. Every strand and surface wire contacts full length inner surface of clamp. Two halves are gripped tightly onto rope by alloy steel nuts. These units have been tested and approved for use on high tensile strength wire rope by Underwriters' Laboratories. Wire ends are enclosed for safety. Rustproofing by heavy cadmium plating is available at slight additional cost. Made by National Production Co., 5002 St. Jean Ave., Detroit 13, Mich.

▲ Mention Item NED-1196-A when writing ▲

END QUENCH TEST FIXTURE



Facilitating making of Jominy end quench hardenability tests for National Emergency or NE steels, this fixture with its accessory tongs is simple to use. Equipment permits determination of response of NE steels to heat treatment in accordance with standard practice as approved by American Iron and Steel Institute. Made by Claud S. Gordon Co., 3000 S. Wallace St., Chicago 16, Ill.

▲ Mention Item NED-1197-A when writing ▲

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SURPLUS MATERIALS

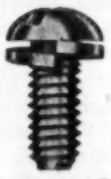
■ Raw and fabricated materials, standard parts, motors, hardware, fabrics, precision tools, equipment and other surplus stocks are being offered for sale by the Army Air Forces.

Companies interested in such materials and who are desirous of having their names placed on the active bidder's list are invited to write to the Army Air Forces, Materiel Command, Midcentral Procurement District, 111 W. Jackson Blvd., Chicago 4, Ill. Attention: Redistribution and Salvage Section.

▲ Mention Item NED-1198-A when writing ▲

FASTENING DEVICES

Preassembled with internal or external Springtite, KnolinK or Springlox lock washers which are not removable, Springtite Semblies are fastening devices which speed production and assembly operations. First announced in 1941, these combination screw-lock-washer units are now available in wide range of sizes and in all head types, including round fillister binding or truss, Phillips, recessed hexagon, hex head internal and slotted hex external.



Claimed advantages include savings of time, space and waste, as well as long life and low costs. Spring lock washer is placed on blank bolt or screw of any size head type and then threads are rolled on blank. This keeps lock washer on and makes assembly single unit. Having washer already in place effects considerable savings in all assembly operations requiring locking screws or bolts. Made by Eaton Mfg. Co., Reliance Spring Washer Div., Massillon, O.

▲ Mention Item NED-1199-A when writing ▲

Do You Know

■ "BATTLE for the Beaches" a swiftly moving 16 and 35-millimeter sound film of all-out invasions that will pave the way to Berlin and Tokyo is now available for showings to war workers. Based upon actual combat scenes, many hitherto unrevealed, this moving picture is narrated by Quentin Reynolds, ace war correspondent. War plants desiring to exhibit film should write to Industrial Incentive Division, U. S. Navy, 2118 Massachusetts Ave., N.W., Washington 25, D. C.

▲ Mention Item NED-1200-A when writing ▲

Anti-fouling paints currently being tested promise to eliminate need for drydocking boats to remove barnacles from hulls. Poison incorporated in paints is claimed to prevent barnacles from cementing themselves to ship's hull. Hercolyn resin acts as plasticizer in paints to keep them open and soft, leaving poisons free to protect surface. Developed by Hercules Powder Co., Wilmington, Del.

▲ Mention Item NED-1201-A when writing ▲

Claimed to maintain efficiency of gun crews by keeping plane's armament at proper firing temperatures, conductive rubber heating pads are being installed on machine guns and aerial cannon. Low voltages applied to rubber produces varying temperatures ranging from 30 to 200 degrees above zero, depending upon operating conditions. Developed by United States Rubber Co., 1207 Rockefeller Center, New York, N. Y.

▲ Mention Item NED-1202-A when writing ▲

Fluorescent plastic envelopes made of Plastacele cellulose acetate incorporating fluorescent pigment are making possible night map reading aboard Allied planes, ships and small boats, without need for blackout quarters for the navigator. Markings applied to surface of envelope may be erased and surface reused many times. Materials enclosed in envelopes are readily visible also under ordinary illumination or daylight. Made by E. I. du Pont de Nemours & Co., Plastics Dept., Wilmington 98, Del.

▲ Mention Item NED-1203-A when writing ▲

Depicting applications of Micro Switches in ships, planes, tanks, trains and motor vehicles, 16-millimeter sound all-color motion picture entitled, "Uses Unlimited," is now available for showing in war plants and industrial trade schools. Applications of this device for precision control of electric circuits in all types of equipment is covered. Issued by Micro Switch Corp., 205 South Chicago Ave., Freeport, Ill.

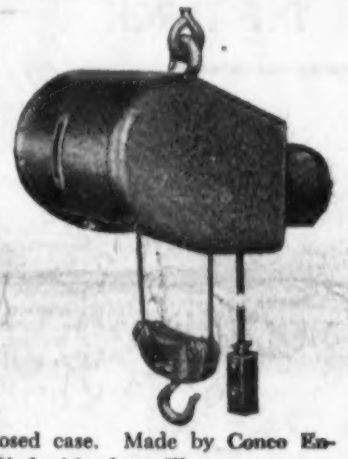
▲ Mention Item NED-1204-A when writing ▲

Read Carefully
CHECK AND PASS ON

CHECK	NAME AND TITLE	SEE ITEM NO.

ELECTRIC HOIST

Available in 250, 500 and 1000-pound capacities, this line of improved Torpedo electric hoists is adaptable for all types of material handling operations requiring compact hoist which is easily moved from one location to another. Of double drum construction, it has push button control. It can be furnished for hook, bolt or trolley suspension. Solenoid brake assures safety of operation. Single-pole paddle type limit switch and protective housing are added safety features. Design is such that only two gear reductions are used. All gear shafts are ball bearing mounted and gears operate in bath of oil in fully enclosed case. Made by Conco Engineering Works, Bransau Blvd., Mendota, Ill.



▲ Mention Item NED-1205-A when writing ▲

SMALL ELECTRIC MOTOR

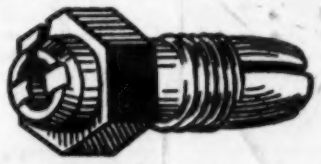
Primarily designed to operate blowers for cooling purposes in aircraft equipment, this direct current motor operates on 28 volts and draws 0.75 amperes to provide 1/80 horsepower at 8000 revolutions per minute. Light in weight and of approved design, it features fully enclosed, ball bearing construction. Weighing 17 ounces, it measures 3 inches long by 1⅞ inches in diameter. Basic design may be modified to meet other volume applications with either shunt or series winding for desired voltage, current drain and output up to 1/50 horsepower consistent with speed and duty cycle. Made by Alliance Mfg. Co., Lake Park Blvd., Alliance, O.

▲ Mention Item NED-1206-A when writing ▲

ANGLE DRILLING COLLET

Replacing usual collet employed for angle drilling, this Flute Key collet is so designed that small broken pieces of drills may be used instantly without soldering or swedging.

FRONT VIEW



SIDE VIEW

Self-locking device holds drill securely and in perfect alignment. Collet is particularly useful in reaching relatively inaccessible places with any angle drill. Vibration of tool in operation is claimed to actually tighten grip of collet. Made by Topflight Tool Co., P. O. Box 6728, Towson 4, Md.

▲ Mention Item NED-1207-A when writing ▲

with PLASTIC ROCK!

Trowel a smooth, tough, plastic surfacing right over your old concrete or wood floor.

Plastic Rock comes complete, packed in barrels. Nothing more to buy. No application "formula" to confuse you. Simply mix and trowel right over old floor. Average depth one-half inch. Old floor Saturday is a new floor Monday. Also patches concrete to a perfect feather edge. Plastic Rock is absolutely spark-proof, skid-safe wet or dry, dustless, silent. Feels like cork under foot. Cannot splinter, crack, crumble, curl or loosen. Heavy loads on steel wheels actually improve it. Five-year old floors show no wear. Natural color is dark gray. Also furnished in red and brown. Used by U. S. Army, Navy and largest industries in America. Your contractor or your own crew can apply.

Ask for your copy of Report 220-3

UNITED LABORATORIES, INC.
16804 EUCLID AVENUE · CLEVELAND 12, OHIO
In Canada—STORRAR MFG. COMPANY, Weston, Ontario

▲ Mention Item NED-1208-A when writing ▲

THE TOOL THAT REPLACES THE TORCH

IT'S the Burndy HYTOOL . . . the easy-to-use indenting pliers which *indent* Burndy HYDENT connectors to wires merely by closing the jaws. It makes a small wire electrical connection quicker, *surer* and *stronger*, than by any other method.

Burndy HYDENT connectors, are *one-piece, pure copper* connectors. Thus, when firmly indented to wires with the HYTOOL, they provide connections of *maximum conductivity*, that are *on to stay!*

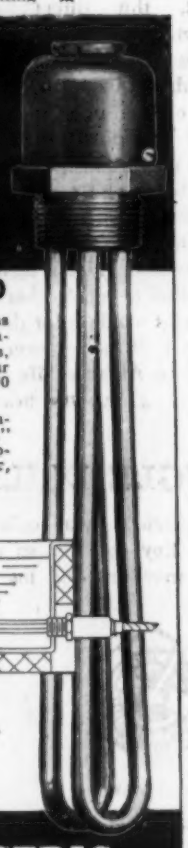
For electrical maintenance, as well as in manufacture, you can *lower installation and servicing costs*, and *improve circuit efficiency*, by using the HYTOOL instead of the torch. Why not send for the new HYDENT catalog, today?

Burndy HYDENT Connectors are available for all wire and cable sizes from #30 to 2500 mcm . . . and in types for all connection problems.

Headquarters for CONNECTORS
Burndy
BURNDY ENGINEERING CO., INC.
107 EASTERN BOULEVARD, NEW YORK 54, N. Y.

▲ Mention Item NED-1209-A when writing ▲

Practically ANY LIQUID CAN BE HEATED with G-E IMMERSION HEATERS



Prices from $8.70

HEAT water, oil, or mild chemical solutions efficiently and economically with G-E immersion heaters. A wide variety of sizes, shapes, and sheath materials are available to meet your specific requirements. (Ratings up to 10,000 watts, lengths up to 46 inches.)

Information for ordering, and prices, in our catalog, "Electric Heaters and Heating Devices," GED-650. Bulletin GEA-3601 gives complete application and installation data. *General Electric, Schenectady, N. Y.*

EASY TO INSTALL

Over-the-side type — Screw-in type

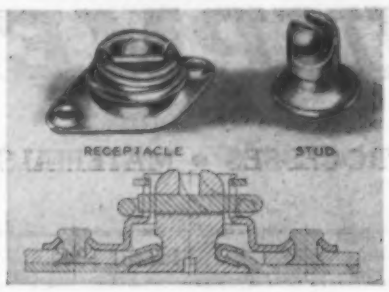
For

Hot cleaning baths
Dipping tanks
Hot oil jackets
Tempering baths
Hot-water tanks
Steam-jacketed devices
Steam generators
And many other uses

GENERAL ELECTRIC
675-77-8709

▲ Mention Item NED-1210-A when writing ▲

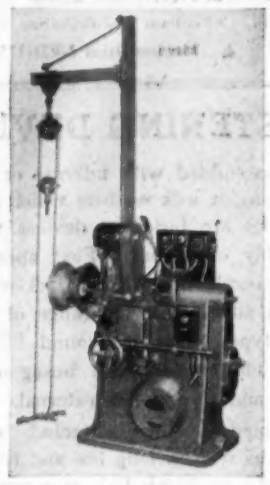
SPRING-LOCK FASTENER



Particularly suited for holding engine cowlings on aircraft, this light weight Spring-Lock fastener meets specifications of Army Air Forces and Navy Bureau of Aeronautics, it is claimed. It is also adaptable for such commercial applications as access plates on farm machinery, panels on motor trucks, home heating equipment or at any point where quick-acting, vibrationproof fastening is needed. Quarter turn of stud securely locks unit. Made by **Elastic Stop Nut Corp.**, 2350B Vauxhall Rd., Union, N. J.

▲ Mention Item NED-1211-A when writing ▲

BRAKE DRUM TRUING MACHINE

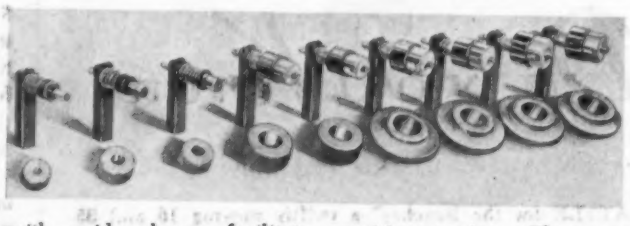


Designed to meet specific needs of military aircraft maintenance, this aircraft brake drum truing machine handles wide range of sizes. It is also adaptable for civil aircraft maintenance. Use of squirrel cage induction motor eliminates danger of sparks. Other features include magnetic starter switches, special cones to fit aircraft drums and silencers. Turret may be rotated to change from turning to grinding operations in about 30 seconds. Set-up need not be altered for either operation. Machine is available with or without hoist for handling drums. Made by **Lempco Products, Inc.**, 5756 Dunham Rd., Bedford, O.

▲ Mention Item NED-1212-A when writing ▲

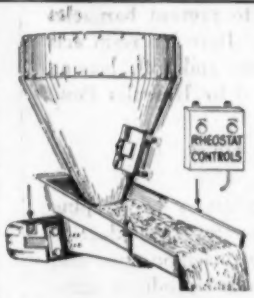
INDICATING PLUG GAGES

Designed especially for checking small parts which are more easily gaged by passing part over plug, rather than introducing plug gage into part, this line of bench type indicating plugs



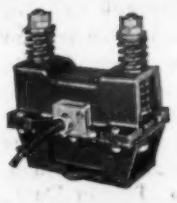
with guide sleeves facilitate precision gaging. They are mounted on small stand which can be clamped or fastened onto inspection bench. Guide sleeve serves to line up part concentric and parallel to gage. This speeds up gaging and reduces wear or damage to plug. Handle type indicating plug gages are also available with guide sleeves to prevent scoring or marking of gaged holes. Gages are made for use with air operated indicating columns. Made by **Metrical Laboratories, Inc.**, Dept. 21, 417 Detroit St., Ann Arbor, Mich.

▲ Mention Item NED-1213-A when writing ▲



Your Material Handling Problems Simplified With SYNTRON

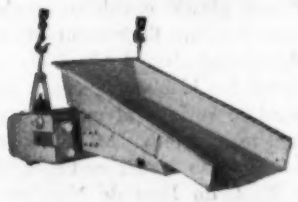
"Pulsating Magnet"
ELECTRIC VIBRATORS



With adjustable power on those "constipated" bins and hoppers to keep their contents agitated and free-flowing.

Little 4 lb. models—up to big 500 lb. models.

"Vibra-Flow"
VIBRATORY FEEDERS



Under those bins and hoppers to regulate their discharge by rheostat control of rate of flow.

Capacities of from Ounces to 500 tons per hour.

Investigate the advantages and economies of handling materials by vibration—Write

SYNTRON CO., 405 Lexington Ave., Homer City, Pa.

▲ Mention Item NED-1214-A when writing ▲

SOLVE TOUGH Fastening Jobs In Hollow Material with

Fig. 123

PAINE TOGGLE BOLTS and TOGGLE BOLT CLAMP

Ask your Supplier and write for catalog.

THE PAINE CO.
2977 Carroll Ave.
CHICAGO 12, ILL.
Offices in Principal Cities

PAINE FASTENING and HANGING DEVICES

▲ Mention Item NED-1215-A when writing ▲

PN

SOCKETYPE CABLE TERMINALS

Exclusive Features

★ No Engineering Change Necessary
★ Saves 90% on Critical Material
★ Speeds Cable Assembly
★ Simplified Swaging
★ Interchangeability

9 Sizes in Both Fork and Eye Types
1/16" · 3/32" · 1/8" · 5/32"
3/16" · 7/32" · 1/4" · 9/32"
and 5/16" Cable Sizes
Other Sizes Made to Order

Approved as interchangeable with B and C types of present standard AN 667 & 668.

POULSEN & NARDON, INC.
LOS ANGELES 11, CALIFORNIA

▲ Mention Item NED-1216-A when writing ▲

Automotive thrust bearings incorporated in the design give large collet closing variation, necessary for second operation work. Collets can be changed while lathe is in operation.

All Allison Collets—round—hexagon—square and serrated are ready for immediate delivery. Special sizes and shapes on short notice. Order direct from your distributor.

Allison TOOL AND ENGINEERING CO.
4031 Whittier Boulevard, Los Angeles 23, California

▲ Mention Item NED-1217-A when writing ▲

GRAY TROLLEYS

are SAFE and EFFICIENT with CLOSE HEADROOM

•

EQUIPPED WITH GRAY Thoroughly Sealed Ball Bearing Trolley Wheels

•

IMMEDIATE DELIVERY

Long trouble-free service is what you get with every Gray trolley equipped with new type, Gray ball bearing trolley wheels which take maximum radial and thrust loads. Gray trolleys are easily transferred through the shop and can be furnished in 250 lb. to 2 ton standard capacity sizes adjustable to suit various size I-beams. Write for illustrated bulletin describing features of Gray trolleys and trolley wheels.

GRAY HUB COMPANY

Incorporated 1922

7265-17403 GABLE AVENUE DETROIT 12, MICHIGAN

▲ Mention Item NED-1218-A when writing ▲

LATHE COLLET CHUCKS

Available for 1½-inch 8-thread spindles with ⅞-inch collet capacity and for 2½-inch spindles and under with 1⅝-inch collet capacity, this collet chuck employs full circular, low pressure cam to activate collet closing mechanism and assures any required collet gripping pressure for various materials. Large area of cam is claimed to reduce pressure at any point 90 per cent as compared with mechanisms using high pressure pins, wedges or dogs. Component parts are precision hardened and ground to exacting tolerances.

But little pressure and short travel distance are required on operating handle when closing or opening collet. Handle travels at right angles to ways of lathe bed. One hand of operator is free to insert, feed stock or operate bed turret. Because mechanism is circular and balanced, it is adaptable to polishing lathes and other high speed spindles, as well as to standard lathes. Made by Allison Tool & Engineering Co., 4031 Whittier Blvd., Los Angeles 23, Calif.

▲ Mention Item NED-1221-A when writing ▲

MOBILE INSPECTION UNIT

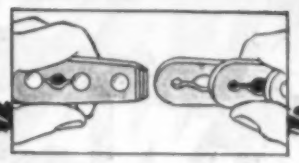
Containing a complete set of precision gages and gage instruments normally found in inspection departments, DoALL mobile inspection unit provides accurate inspection at point of work on any job. Unit safeguards measuring instruments and can be locked up to protect instruments and records kept by inspector. Entire unit occupies but 7 square feet of floor space. Accuracy of instruments against wear, dirt and rough handling is quickly checked by using optical flats and monochromatic light included in unit.

Unit has all-steel construction which assures sturdiness and prevention of warp and twist. Rigid foundation is formed for working surface which is covered with heavy duty linoleum. Small ledge or bead ⅛-inch high surrounds rim of work table to prevent instruments from sliding off work surface. Unit is easily moved throughout plant on four rubber-tired caster wheels, which can be locked so that unit becomes securely anchored when in use.

Plug-in box is provided at back of unit to supply electricity for monochromatic light, electric comparator and magnifying glass. Box contains 50-foot extension cord that is secured to automatic take-up reel. Unit has desk drawer providing ample space for records. There is a pull-out desk so that operator can make notations, change notices and repair notices on spot. Collapsible chair is also furnished so that he can sit at desk in writing his reports. Unit is made by Continental Machines, Inc., 1314 Washington Ave., S., Minneapolis 4, Minn.

▲ Mention Item NED-1222-A when writing ▲

BROWNING Griplink BELT

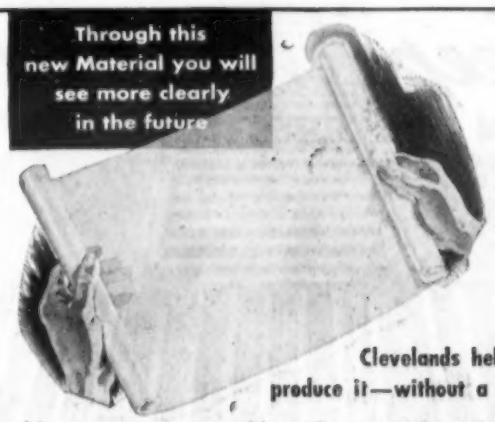


★ Made from specially developed materials.
★ Easily adjustable, and quickly replaceable.
★ No machinery tear down or prolonged idleness.
★ Available from stock in all "V" Belt cross sections.
★ Write for completely detailed bulletin, V-161.

Browning Manufacturing Company, Incorporated
MAYSVILLE, KENTUCKY

▲ Mention Item NED-1224-A when writing ▲

Through this new Material you will see more clearly in the future



Clevelands help to produce it—without a flaw

The machines must operate with uniform angular velocity. Even the slightest variation in speed will form a streak or ridge. Drives of another type failing to meet this requirement caused a high percentage of scrap.

The manufacturer has used Clevelands successfully on other applications for more than 20 years—so he installed them on this equipment too. Clevelands smoothed out the operation—quickly eliminating defective production.

You can depend on Cleveland Worm Gear Speed Reducers. Send for the Cleveland Representative—specify Clevelands for your new equipment.

The Cleveland Worm & Gear Company, 3283 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication
IN CANADA: *Peacock Brothers Limited*

CLEVELAND WORM GEAR *Speed Reducers*

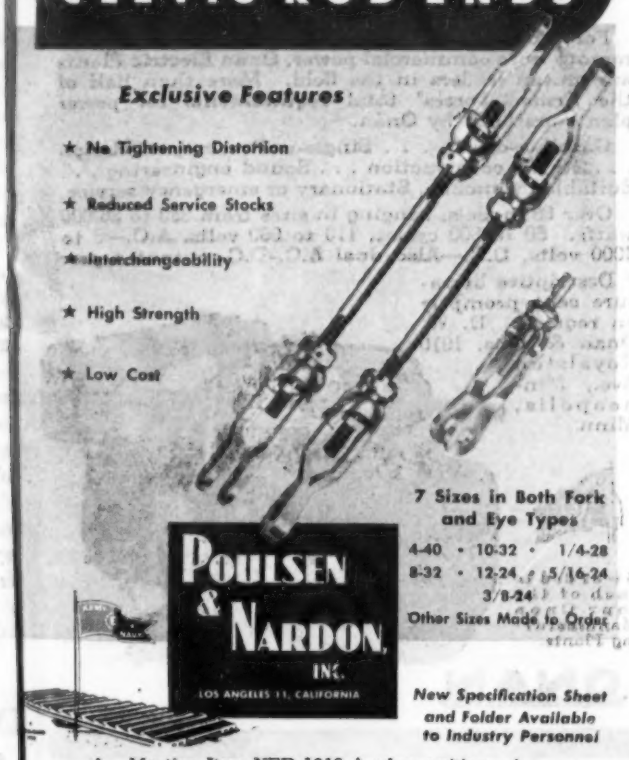
▲ Mention Item NED-1225-A when writing ▲

PN

SOCKETNUT CLEVIS ROD ENDS

Exclusive Features

★ No Tightening Distortion
★ Reduced Service Stocks
★ Interchangeability
★ High Strength
★ Low Cost



7 Sizes in Both Fork and Eye Types
4-40 • 10-32 • 1/4-28
8-32 • 12-24 • 5/16-24
3/8-24
Other Sizes Made to Order

POULSEN & NARDON, INC.
LOS ANGELES 11, CALIFORNIA

New Specification Sheet and Folder Available to Industry Personnel

▲ Mention Item NED-1219-A when writing ▲

SpeedWay

½" DRILL
$32.50
With Jacobs Chuck

MORE DRILL for the Money

The last word in ½" capacity drills with every advanced feature. Powerful specially designed Universal Motor pours power thru triple reduction hardened steel gears. Forced air cooling prevents overheating. Housing is sturdy, light weight die casting. Self-aligning porous bronze bearings soak up oil like a sponge, release it slowly as bearing temperatures change. New type "In line" rear grip makes it natural to drill straight holes. One handle removable for close quarter drilling. Light weight (only 10¼ lbs.) means easy handling, yet it is so powerful that it will drill a ½" hole in iron with 300 lbs. weight on the bit. Jacobs key operated chuck. This is not a heavy duty production line tool, but it will give exceptional service to the garage man, maintenance man, contractor or installer.

SPEEDWAY MANUFACTURING COMPANY
1868 S. 52nd Avenue Cicero, Illinois

▲ Mention Item NED-1220-A when writing ▲

PRODUCTION EXECUTIVES AGREE:
"No Reconversion from American Phillips Screw-Driving"

There's one sure thing in the plans of modern war plant executives . . . they'll never go back to the slow, slip-and-slash, high cost method of assembly with old-fashioned slotted head screws. They'll hold the gains they've made with American Phillips Screws which average better than 50% in assembly time, plus the elimination of rejected work and spoiled materials, thanks to the automatic alignment of the 4-winged Phillips Driver that stays with the tapered recess until the screw has been set up straight and tight.

ONLY PHILLIPS SCREWS HAVE THE ENGINEERED TAPERED RECESS

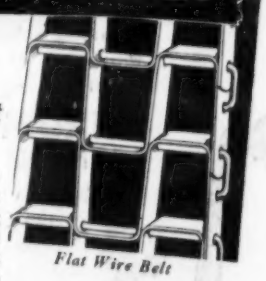
AMERICAN SCREW CO.
PROVIDENCE, RHODE ISLAND
Chicago: 589 E. Illinois Street
Detroit: 502 Stephenson Building

★ BUY WAR BONDS ★

▲ Mention Item NED-1223-A when writing ▲

GOODS MOVE
SWIFTLY and SURELY

. . . on metal conveyor belts that last



Flat Wire Belt

CYCLONE Metal Conveyor Belts assure dependable, inner-plant transportation of goods. They're strong enough to carry heavy loads day in and day out. They're flexible. Water, steam or temperature changes will not harm them. These tough metal belts regularly carry parts or products through many operations where belts of other materials fail. They are now winning widespread favor for vegetable dehydrating.

U·S·S Cyclone Conveyor Belts are available in Chain Link or Flat Wire types—in a variety of widths, weights and size of mesh. Write for more information and prices.

Chain Link Belt

CYCLONE FENCE DIVISION
(American Steel & Wire Company)
Waukegan, Ill. · *Branches in Principal Cities*
United States Steel Export Co., New York

CYCLONE *Metal Conveyor Belts* UNITED STATES STEEL

▲ Mention Item NED-1226-A when writing ▲

▲ Mention Item NED-1227-A when writing ▲

If your materials, parts or finished products must *keep moving*—in a line, at angles, around corners, up or down or out—a Logan Conveyor System handles the job at a big saving of time, space and man-hours. Write Logan Co., Inc., 215 Cabel St., Louisville, Ky., for "Key Book."

Logan Conveyors

PUT *FLOW* INTO PRODUCTION

▲ Mention Item NED-1228-A when writing ▲

The easy way to heat LIQUIDS is ELECTRICALLY

Tanks, vats, kettles, paint, process liquids, cleaning solutions—all are being heated in thousands of plants, to predetermined temperatures, rigidly maintained, with

CHROMALOX ELECTRIC IMMERSION HEATERS

Portable and stationary types, all described in the Chromalox Catalog—on request. Tell us what you want to heat.

EDWIN L. WIEGAND COMPANY

7500 Thomas Blvd. Pittsburgh 8, Pa.

▲ Mention Item NED-1229-A when writing ▲

HOT WATER GENERATOR

Oil burning and fully automatic, this hot water generator is designed for marine and industrial applications. Burner is fully automatic, foolproof and easy to operate. Diesel or lighter fuel can be burned under positive pressure which is supplied by low speed motor.

Heater is down-fired, with multiple pass over heat absorbing surfaces. Combustion occurs in Carborundum chamber through which flame has corkscrew travel. There are no negative drafts or smoke, eliminating need for special stacks. Burner is adjusted to burn correct amount of oil before shipment.

Type A units having 400 to 1000 square feet of radiation surface weigh only 300 pounds. Larger capacities from 100 to 4500 square feet equivalent direct radiation and up are available. Made by Air Devices, Inc., Dept. D, 17 E. Forty-second St., New York 17, N. Y.

▲ Mention Item NED-1230-A when writing ▲

ELECTRIC WATER COOLER

Self-contained with refrigerating mechanism located in base of cabinet, this electric water cooler was specially designed for restaurants and industrial cafeterias. It is equipped with two push-down glass fillers so that two waitresses or patrons can fill glasses at one time, thus facilitating quick service. Cooler has capacity of up to 18 gallons per hour at refreshing spring-water temperatures.

Cabinet has removable panels for easy access to mechanism without interrupting operation of cooler. Top is white porcelain enameled and cabinet is finished in neutral gun metal furniture finish. Entire unit is designed with special emphasis on sanitation and elimination of contamination of water supply. Cabinet is rat-proof thus preventing breeding, mechanical failures and fire hazards. Made by Cordley & Hayes, 457 Fourth Ave., New York, N. Y.

▲ Mention Item NED-1231-A when writing ▲

IRON CEMENT

Effective repairs of broken, cracked or defective metal castings, piping or other parts may be made with Fix-Iron cement. This material may also be used for making joints, seams and loose parts secure, and for stopping leaks in boilers, firepots and other metal equipment.

Supplied in powder form, it is mixed as used with water. No heat is required. It is easily and quickly applied with putty knife or similar tool and may be hammered into cracks or broken parts. It hardens quickly and is claimed to have same expansion properties as iron itself, thus assuring tight, permanent joints.

Cement may be used on iron, steel, brass and other metals. It is also applicable to wood. It is available in 1¾ and 7-ounce glass jars, 1 and 5-pound cans and 25 and 100-pound kegs. Made by So-Lo Works, Loveland, O.

▲ Mention Item NED-1232-A when writing ▲

VACUUM AT THE *Conveyor* LINE

Spencer vacuum, piped direct to the production line, benches or assembly tables is removing metal chips, lint, dusts and liquids without holding up the work.

One Spencer vacuum producer will supply suction at a dozen points where products should be cleaned. Also furnish vacuum to a crew of operators for cleaning of floors, ceilings and walls.

Rated as essential by hundreds of war-time production plants, it will be a necessity for competitive manufacture of peace-time products wherever speed, accuracy and overall efficiency are involved. Ask for the bulletins.

SPENCER VACUUM CLEANING

HARTFORD

THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

▲ Mention Item NED-1233-A when writing ▲

SAFE-LINE WIRE ROPE CLAMPS

Write for details of this—the only PERFECTED wire rope clamp on the market. Used by the Armed Forces and thousands of industries.

NATIONAL PRODUCTION COMPANY

4857 ST. JEAN AVENUE DETROIT 13, MICHIGAN

▲ Mention Item NED-1234-A when writing ▲

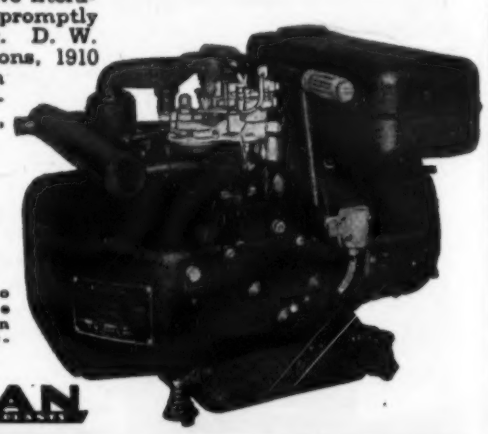
ELECTRICITY FOR ANY JOB ANYWHERE

For a dependable source of electricity on projects remote from commercial power, Onan Electric Plants are proven leaders in the field. More than half of the Armed Forces' total requirements for power plants are built by Onan.

Gasoline-driven . . . Single-unit, compact design . . . Sturdy construction . . . Sound engineering . . . Suitable for mobile, Stationary or emergency service.

Over 65 models, ranging in sizes from 350 to 35,000 watts. 50 to 800 cycles, 110 to 660 volts, A.C.—6 to 4000 volts, D.C.—Also dual A.C.-D.C. output types.

Descriptive literature sent promptly on request. D. W. Onan & Sons, 1910 Royalston Ave., Minneapolis, Minn.

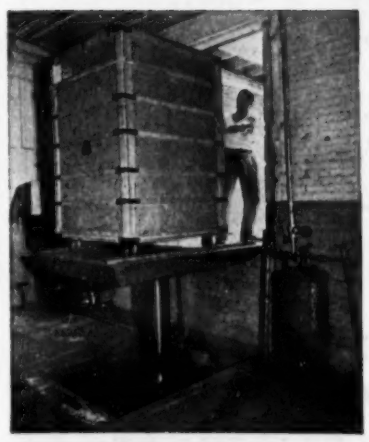


Awarded to each of the four Onan Manufacturing Plants.

ONAN

▲ Mention Item NED-1235-A when writing ▲

REVOLVATOR HYDRAULIC ELEVATORS



for SAFETY and ECONOMY

This Ramp Eliminator saves time and trouble in moving material between basement and street level.

For short lifts—floor to floor, truck loading, press feeding—REVOLVATOR HYDRAULIC ELEVATORS are ideal in factory, warehouse, store, garage, and many other buildings. Their simplicity and safety; their low cost, both to install and maintain, make them extremely popular. Standard and special designs for hand, electric, water or oil-air operation.

Send for folder NED

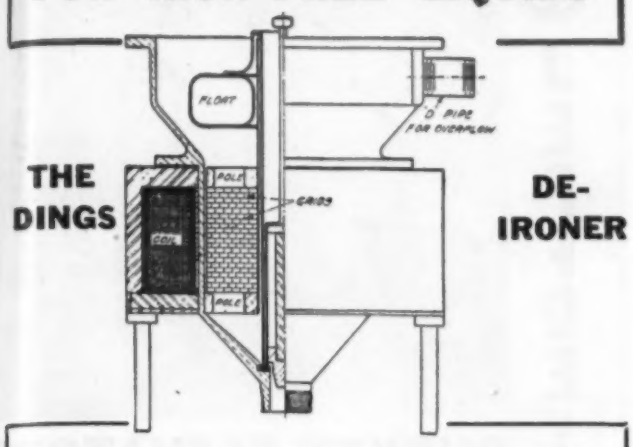
REVOLVATOR Co.

DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT

2032 86th St. NORTH BERGEN, N. J. Since 1904

▲ Mention Item NED-1236-A when writing ▲

FOR IRON-FREE LIQUIDS



THE DINGS DE-IRONER

Designed to remove from liquids deleterious iron—including particles of iron oxides as small as micron size, the Dings De-Ironer is widely used for purifying ceramic slip and glaze, oils, inks, foods and many other liquids. Capacities range as high as 14000 gals. per hour on some substances. Thousands of lineal feet of iron-catching edges insure maximum iron-removal. Open or enclosed type pressure models are available. Unit is 20" high. For full details, write to Dings.

Dings Magnetic Separator Co.
620 E. Smith St., Milwaukee 7, Wisconsin
World's Largest Exclusive Builder of Magnetic Equipment. Established 1899

▲ Mention Item NED-1237-A when writing ▲

"No, Mabel, there are no microbes in the Micro-Bean. The bugs have all been worked out."

INSTALL THE

CAMPBELL MICRO-BEAN

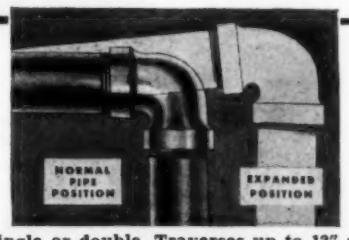
Eliminates pulsations and jitters in gauges. Instantly adjustable to all varying conditions of flow, surface tension and viscosity. For all gauges and instruments. Request Bulletin.

J. A. CAMPBELL CO.
645 E. Wardlow Road Long Beach 7, Calif.

▲ Mention Item NED-1238-A when writing ▲

Do You Realize . . .

- THAT A LOW PRESSURE STEAM SUPPLY LINE 1000 FT. LONG MAY EXPAND MORE THAN 15" WHEN STEAM IS ON?
- THAT A RETURN LINE 1000 FT. LONG MAY EXPAND MORE THAN 10"?
- THAT YOU CAN NOT PREVENT IT?
- THAT YOU MUST PROVIDE FOR IT?



While the hazard from broken pipe or fittings may be less in low pressure than in high pressure steam lines, it is by no means negligible.
Provide for expansion and contraction with ADSCO Expansion Joints. Various types and sizes—single or double. Traverses up to 12" per slip. Piston ring joints that can be packed and repacked under pressure—internally guided—internally-externally guided, single or double joints with flanged or beveled ends—with or without bases, drip connections, service outlets. Write for catalog No. 35 D.

AMERICAN DISTRICT STEAM COMPANY
N. TONAWANDA, N. Y.
MAKERS OF "UP-TO-DATE" STEAM LINE EQUIPMENT FOR OVER 60 YEARS.

ADSCO EXPANSION JOINTS
Eliminates cumbersome pipe bends

▲ Mention Item NED-1239-A when writing ▲

LARGE BAND SAW

Built for high speed, accurate, production service, model X-40 thirty-six inch band saw has one-piece cored cast frame which assures ample support without deflection or vibration at any speed. Motor base supporting 5 or 7½ horsepower direct drive motor is cast integral with frame. Conveniently located handwheel tilts table and pointer registers degree of tilt automatically, with positive stops at 45 degrees right and 5 degrees left.

Steel disc type wheels run at 900 revolutions per minute. They are dynamically balanced, with demountable and interchangeable rims and removable heavy steel-reinforced rubber tires. Blade is balanced by straining spring for shock absorption. Scale indicates proper tension for different blade widths.

Saw guides are roller type with deep groove precision ball bearings which permit high speed with minimum of wear. Mechanical foot brake of external toggle type has automatic cut-off switch which acts instantly when slightest pressure is applied. Spot welded steel guards fully enclose wheels and sliding guards enclose saw above roller guide and at back of column. Made by American Saw Mill Machinery Co., 195 Main St., Hackettstown, N. J.

▲ Mention Item NED-1240-A when writing ▲

DIEMAKER'S WIGGLER

Enabling tool and diemakers and machinists to make precision set-ups quickly and with extreme accuracy, this wiggler is equipped with three interchangeable shafts. These shafts are held by spring chuck which allows them to be interchanged without repeated adjustment. Proper spring tension is secured by turning knurled collar with fingers before inserting ball of any attachment. Thereafter shafts may be interchanged by snapping them into and out of chuck.

Ball shaft is used for indicating from ground or machined surfaces, from gage blocks and from side of round bars. Hardened and ground ball is 0.250 inch in diameter. In use, ball is first made to run true by holding blunt object against it while spindle is turning. Then it is coated with layout blue. Work is then fed toward ball until blue is barely wiped. Table is next lowered and moved 0.125 inch to bring reference surface directly under spindle center. Subsequently, by using micrometer collar on lead screw, any desired distance can be located within very close limits.

Bent shaft is designed to hold any type indicator, either on shank or in hole. It is used for locating from toolmaker's buttons or holes and allows ball of indicator to be positioned on any circle from center of spindle to diameter of 6 inches.

Needle-point shaft is used to find centers and true to layout lines in same manner as ordinary wiggler. Sharp, slender point is held in rigid friction grip and is replaceable as are points of other needle-point tools. Made by Nork Products Co., 5897 South Main St., Los Angeles 3, Calif.

▲ Mention Item NED-1241-A when writing ▲

Who Can Use This After The War?

We are now producing electric motors designed for jobs no regular motor can fill.

The jobs are on America's planes—working flaps, opening and closing shutters, lifting landing gears, etc.

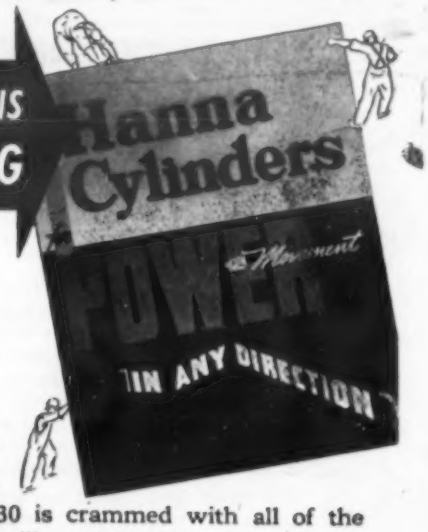
Every ounce on an airplane is precious, so these motors are unusually light—the smallest weighs 8/10ths of a pound. But they also have big jobs to do—so the largest is able to move as much as 35 tons.

After the war you may have need for such a compact, ultra-efficient source of power. You may be able to use the kind of engineering thinking that developed it—or the production technique that builds it and about 250 other Lear products.

LEAR AVIA INC.
PIQUA · OHIO

▲ Mention Item NED-1242-A when writing ▲

SEND FOR THIS CATALOG of Hanna Air Cylinders



CATALOG 230 is crammed with all of the data you will need to order the *right* air cylinder *quickly*.

There is a Standard Hanna Air Cylinder to meet nearly every requirement as to mounting, length of piston stroke and application. They operate under pressures up to 250 lbs.—save time, labor, promote safety, reduce costs and increase production.

HANNA ENGINEERING WORKS
1765 ELSTON AVENUE · CHICAGO 22, ILLINOIS
RIVETERS · CYLINDERS · AIR HOISTS

▲ Mention Item NED-1243-A when writing ▲

Simple – Accurate –

WEIR METERS

for Waste Measurement

Float-and-cable Weir Meters developed by Foxboro offer simple, accurate measurement of liquid flow. Widely used in sewage, chemical processes, and industrial waste disposal.

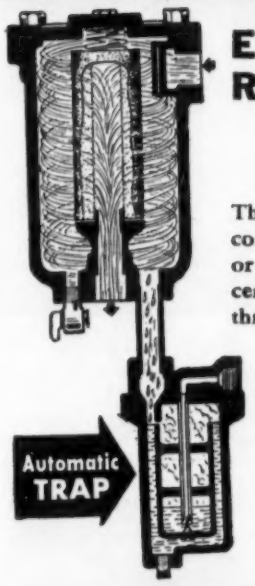
The Foxboro Weir Meter is extremely simple. Operates through motion of float connected with V-notch, rectangular or Cippoletti weirs - or Parshall flumes. Motion is transmitted by cable to accurate recording or integrating mechanisms. Direct-reading, uniform flow scale - copper, rubber-covered, or ceramic floats.

Write for detailed Bulletin A298. **The Foxboro Company, 134 Neponset Ave., Foxboro, Mass., U. S. A.** Also Montreal, Canada. Branches in principal cities.

FOXBORO Reg. U. S. Pat. Off. WEIR METERS

▲ Mention Item NED-1244-A when writing ▲

Poro-Stone Filtration FOR COMPRESSED AIR



EFFICIENTLY REMOVES:

OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 104.

R. P. ADAMS CO., INC.
63 Chicago St. · Buffalo, N. Y.

ADAMS *Poro-Stone* AIR FILTER

▲ Mention Item NED-1245-A when writing ▲

NOW IS THE TIME TO THINK ABOUT MOLYBDENUM . . .

Taylor and White's great discovery which made possible high speed cutting was the greatest single development to help make mass production possible. The steel developed, commonly known as 18-4-1, served industry faithfully for over thirty years without a serious competitor.

In the early 1930's the first molybdenum high speed steels were used on a substantial commercial basis and, before the Second World War, about 25% of all tungsten high speed steels had already been replaced by molybdenum high speed steels on merit. This steady progress of logical replacement of the tungsten steels was interrupted by the war because of the tungsten shortage, when many industrial plants were forced to a sudden change to molybdenum steels.

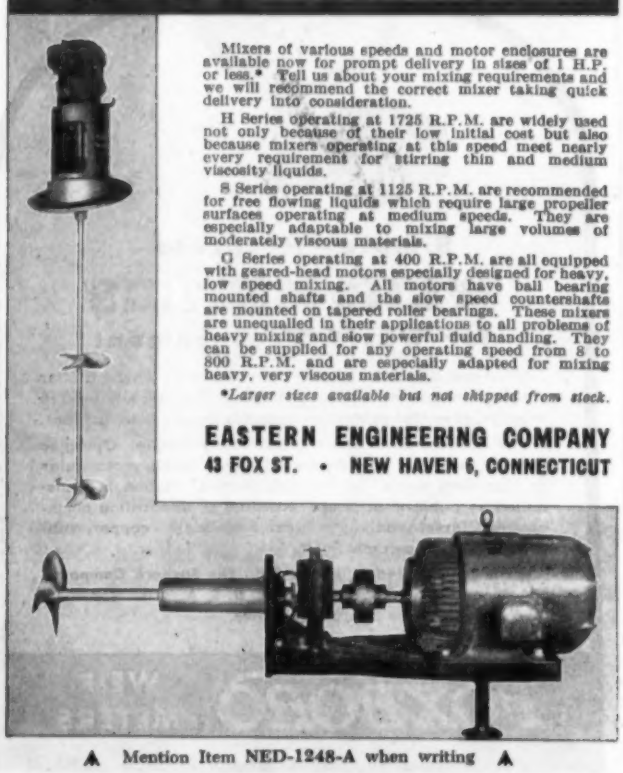
Because of the stress of war production many concerns have never had an opportunity to satisfy themselves thoroughly as to the comparative merits of the molybdenum high speed steels. For those, in this category, who are inclined to return to the tungsten steels, we suggest a serious consideration of the following facts—molybdenum high speed steels perform as well as, or better than, tungsten steels—and they cost less.

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS. MOLYBDIC OXIDE, BRIQUETTED OR CANNED • FERROMOLYBDENUM • "CALCIUM MOLYBDATE"

Climax Molybdenum Company
500 Fifth Avenue • New York City

▲ Mention Item NED-1247-A when writing ▲

EASTERN PORTABLE MIXERS AVAILABLE NOW FOR PROMPT DELIVERY



Mixers of various speeds and motor enclosures are available now for prompt delivery in sizes of 1 H.P. or less.* Tell us about your mixing requirements and we will recommend the correct mixer taking quick delivery into consideration.

H Series operating at 1725 R.P.M. are widely used not only because of their low initial cost but also because mixers operating at this speed meet nearly every requirement for stirring thin and medium viscosity liquids.

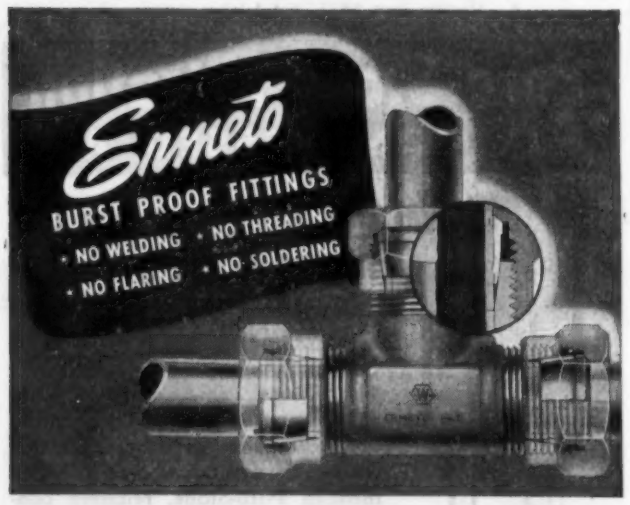
S Series operating at 1125 R.P.M. are recommended for free flowing liquids which require large propeller surfaces operating at medium speeds. They are especially adaptable to mixing large volumes of moderately viscous materials.

G Series operating at 400 R.P.M. are all equipped with geared-head motors especially designed for heavy, low speed mixing. All motors have ball bearing mounted shafts and the slow speed countershafts are mounted on tapered roller bearings. These mixers are unequalled in their applications to all problems of heavy mixing and slow powerful fluid handling. They can be supplied for any operating speed from 8 to 800 R.P.M. and are especially adapted for mixing heavy, very viscous materials.

*Larger sizes available but not shipped from stock.

EASTERN ENGINEERING COMPANY
43 FOX ST. • NEW HAVEN 6, CONNECTICUT

▲ Mention Item NED-1248-A when writing ▲



ERMETO is the answer to the engineer's prayer for the coupling of hydraulic, air, fuel, water, gas and oil lines—particularly where high pressure systems are required.

Ermeto fittings for tubes of any metal not only withstand pressures that exceed the burst strength of the tubing itself, but are also far less expensive and much speedier to install than any customary type of fitting now used. An ordinary wrench is the only tool required. Write for the Ermeto catalog.

THE WEATHERHEAD COMPANY • CLEVELAND 8, OHIO
Branch Offices: Detroit, Los Angeles, New York and St. Louis

Look Ahead with Weatherhead

Weatherhead Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.
PLANTS IN CLEVELAND • COLUMBIA CITY, INDIANA • LOS ANGELES • ST. THOMAS, ONTARIO, CANADA

▲ Mention Item NED-1249-A when writing ▲

PLASTICS HEATING OVEN

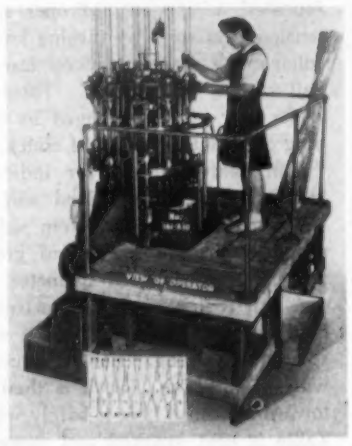
Designed for heating various sizes of Lucite, Plexiglas, Plastacele, Lumarith and other plastic sheets prior to forming into aircraft enclosures, this shelf-type electric oven is divided into four compartments, each having door hinged at bottom. Plastic sheets are placed on cloth covered boards which in turn are supported on expanded metal trays, large enough to hold 5-foot square of material or numerous smaller sheets. Loading and removal is facilitated because plastic sheets are laid flat during heating operation. Foot pedal aids in closing doors and prevents loss of heat.

Each compartment has two shelves. Positive cross-flow circulation is provided in oven by blower type fan and filtered fresh air intake. Only enough fresh air is admitted to create slight pressure in oven. Operating temperature range is 200 to 400 degrees Fahr. Any given temperature may be maintained constant by automatic control.

Heaters are installed in two banks, one manually controlled and used only to bring oven up to temperature quickly. Other bank is automatically controlled and is used to maintain desired temperature. Oven walls are insulated with 4 inches of industrial rock wool. Control equipment includes indicating controller, high limit switch and air-flow safety switch which shuts off oven in event of air flow failure. Made by **George Koch Sons, Inc.**, 2120 W. Pennsylvania St., Evansville, Ind.

▲ Mention Item NED-1250-A when writing ▲

AUTOMATIC AMPULE MACHINE



Capable of producing large ampules in wide variety of shapes, this ampule machine is fully automatic in operation. All operator does is place full 5-foot lengths of glass tubing into revolving chucks connected to slowly rotating spiders. Tubing passes three sets of burners properly located in machine which performs drawing, constricting and bottoming operations. After desired shape is attained, ampule is cut off and discharged to shelf. Before new turn starts, glass tubing is lowered by automatic releasing of tube-holding chuck.

Burners and chucks are adjustable for making different sizes and types of ampules. Tubes ranging from 18 to 35 millimeters in diameter can be handled. Approximate production of machine is 400 to 800 parts per hour, depending on size. Machine is driven by ½ horsepower motor. Operator can attend one or two machines simultaneously. Required gas pressure is 13 inches of water, air pressure 2½ pounds per square inch, and oxygen pressure 3 pounds per square inch. Made by **Eisler Engineering Co.**, 753 S. Thirteenth St., Newark 3, N. J.

▲ Mention Item NED-1251-A when writing ▲

THESE WHEELS FORETELL THE FUTURE

As these wheels read *today* . . . in combination with millions more of such wheels throughout America's war-production plants . . . so will read the headlines *tomorrow*, reporting the fortunes of war from blood-reddened waters and lands around the globe. For these are the figure-wheels of Veeder-Root Counting Devices, endlessly turning to keep the score on production . . . to give instant, visible alarms of any tendency toward power-lag or mechanical slowdown, before these tendencies develop into shortages of material that can cause waste of life, and prolong the war.

VEEDER-ROOT INC.
HARTFORD 2, CONNECTICUT, U. S. A.

▲ Mention Item NED-1252-A when writing ▲

JEFFREY

BUCKET ELEVATORS

The start of almost every conveying job is lifting material up in the air so it can be more conveniently handled on the way down. With Jeffrey bucket elevators there is that day-after-day dependability . . . that reserve strength and durability that count for so many years of efficient, trouble-free service. A type and size for every requirement.

THE JEFFREY MANUFACTURING CO.
(Established in 1877)
952-99 North Fourth Street, Columbus 16, Ohio

Baltimore, Birmingham, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Harlan, Houston, Huntington, W. Va., Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, Salt Lake City, Scranton

Jeffrey Manufacturing Co., Ltd. of Canada. Head Office & Works: Montreal
Branch Offices: Toronto, Calgary, Vancouver

▲ Mention Item NED-1253-A when writing ▲

CONVEYING EQUIPMENT
Alvey-Ferguson
METAL PRODUCTS CLEANING & FINISHING EQUIPMENT

▲ Mention Item NED-1254-A when writing ▲

NOW IS THE TIME TO MODERNIZE YOUR ELECTRICAL DISTRIBUTION SYSTEM

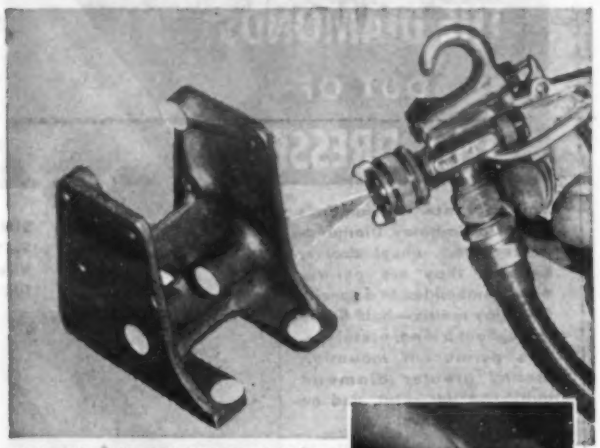
In the face of today's manpower shortage, peak efficiency of electrical distribution systems is vital. It will be equally important in the highly competitive and narrow-margin years ahead.

"Busways and Wireways" illustrates and gives complete data on Square D's entire line of distribution duct. Send for your free copy—and if you have a specific problem in electrical control and distribution, your nearest Square D Field Engineer will be glad to give you sound counsel.

ELECTRICAL EQUIPMENT • KOLLSMAN AIRCRAFT INSTRUMENTS
SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

▲ Mention Item NED-1255-A when writing ▲

Pre-Cut Masking Stickers



● TO APPLY—Simply Press On. No Moisture Required.

● TO REMOVE — Simply Peel Off.

KUM-KLEEN STICKERS SPEED SMALL MASKING OPERATIONS

Kum-Kleen Masking Stickers, with the magic adhesive backing, are applied without moistening . . . adhere to all smooth surfaces . . . will not pop off . . . yet are easily peeled off. Are available in stock sizes or die cut to your specifications.

Send for samples. Write: Masking Dept., Avery Adhesives, giving sizes required.

Kum-Kleen

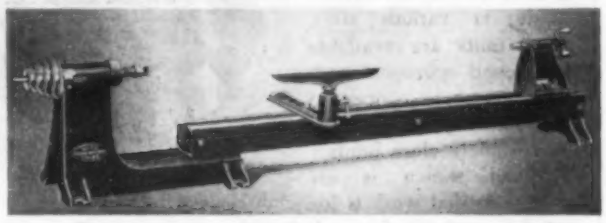
Easily Removed Masking Stickers

Avery Adhesives, Dept. NED-3A, 451 E. 3rd St., Los Angeles, California. In Canada, Enterprise Sales & Distributors, Toronto

▲ Mention Item NED-1256-A when writing ▲

WOODTURNING LATHE

Proper speeds for woodturning and metal spinning operations are provided in this deep gap bed lathe by 4-step cone pulley. Fifty per cent greater face plate capacity is available



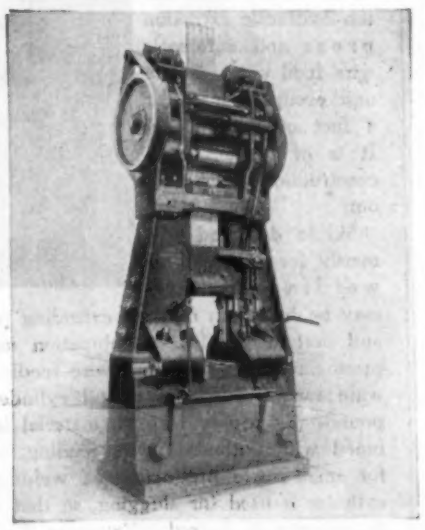
than with straight bed type machine. Capacity is 60 inches between centers, 11-inch swing over bed and 17 x 3 inches over gap. Sufficient distance is provided between centers to turn full length lamp pedestal.

Heavy cast iron head base and tailstock afford rigidity. Large spindle and use of oversize ball bearings throughout assure accuracy. Indexing device permits easy layout of circular work into any number of equal divisions. Tailstock spindle is graduated for boring to predetermined depths. All boring, reaming and milling operations are performed in master jig.

Live spindle has hole through it to permit chucking of long rods or dowels. Both spindles have No. 2 Morse taper sockets and tailstock has self-ejecting center feature. Made by **Boice-Crane Co., 951 Central Ave., Toledo, O.**

▲ Mention Item NED-1258-A when writing ▲

BOARD DROP HAMMER



Having self-contained motor drive, this four-roll board drop hammer has been designed so that it can be built in 10,000-pound size. Ram weighs 7500 pounds and anvil 150,000 pounds. On larger machine ram may weigh 10,000 pounds and anvil up to 200,000 pounds. Only other change required is slight increase in weight of friction bar and use of larger motor.

In this model, motors are carried on top of frame, thereby eliminating overhanging mountings. Motor is cushioned by metallic means and all gearing is fully enclosed. There is gear reduction between pulley shaft and roll shafts. While rolls are free to move in and out to grip and release board, center-to-center distances of gears and pinions do not vary, thus permitting use of involute tooth forms. Because of gear reduction, speed of pulleys is sufficient to provide considerable flywheel effect. High speed motors can be used.

Rolls are carried in pairs in equalizing frames which float free on eccentrics. This affords same pressure between each of four rolls and board regardless of wear. Made by **Erie City Iron Works, 1500 East Ave., Erie, Pa.**

▲ Mention Item NED-1259-A when writing ▲

LIFE TIME MARKING

IDEAL ELECTRIC MARKER

- Permanently marks most materials—glass, metals, ceramics, etc.
- 7,200 cutting strokes a minute.
- Inexpensive — operates from any A.C. outlet.

IDEAL ELECTRIC ETCHERS

- 4 sizes to suit every job, "Thin-Line" to "Heavy-Duty."
- Permanently mark on Iron, Steel, and their Alloys.
- Marks everything from small tools and parts to large, smooth castings.

IDEAL Most complete line of Markers

Details on Request

IDEAL Sycamore

★ IDEAL COMMUTATOR DRESSER CO ★

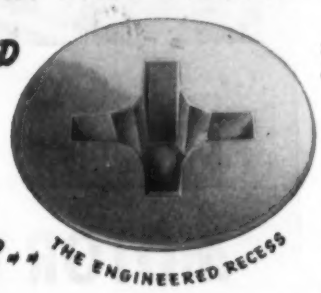
1032 Park Avenue **Sycamore, Illinois**

Sales Offices in All Principal Cities

In Canada: Irving Smith Ltd., Montreal, Quebec

▲ Mention Item NED-1261-A when writing ▲

WHAT WAS THAT THAT JUST WENT BY? NOT A FOUR GENERAL BUT ANOTHER LOAD OF WAR EQUIPMENT THAT WAS PUT TOGETHER IN RECORD TIME SINCE ... THAT FAST-DRIVING RECESSED HEAD SCREW CAME ON THE JOB... IT'S PHILLIPS ...



THE ENGINEERED RECESS

Sure – the news is swell! But the war isn't over yet. The heat's still on and production speed is as vital as ever.

One of the surest ways to get more speed in your assembly operations is to put Phillips Recessed Head Screws in the hands of your workers. Hundreds of plants all over the country have standardized on the Phillips Screw – and the results have been spectacular. Driving speed has often been doubled. Vital man hours have been saved. Production has been greatly increased – thanks to the Phillips Recess which makes power or spiral driving practical.

Some advantages of Phillips Recessed Head Screws are listed here. Check them against slotted head screws – or any other type you may be using. You'll quickly see why it costs less to use screws with the Phillips Recessed Head.

PHILLIPS Recessed Head SCREWS

Wood Screws • Machine Screws • Self-tapping Screws • Stove Bolts

23 SOURCES

American Screw Co. • The Bristol Co. • Central Screw Co. • Chandler Products Corp. • Continental Screw Co. • The Corbin Screw Corp. • General Screw Mfg. Co. • The H. M. Harper Co. • International Screw Co. • The Lamson & Sessions Co. • Milford Rivet and Machine Co. • The National Screw & Mfg. Co. • New England Screw Co. • The Charles Parker Co. • Parker-Kalon Corp. • Pawtucket Screw Co. • Pheoll Manufacturing Co. • Reading Screw Co. • Russell Burdsall & Ward Bolt & Nut Co. • Scovill Manufacturing Co. • Shakeproof Inc. • The Southington Hardware Mfg. Co. • Whitney Screw Corp.

▲ Mention Item NED-1257-A when writing ▲

EQUIPPING WORKERS with the fastest, safest, most accurate tool *for every hand tool operation* inevitably results in better, faster workmanship. Tools poorly adapted to each specific application waste time, skill, energy. Everywhere in industry, Snap-on tools are giving added efficiency to manpower in production, assembly and maintenance operations. Snap-on's direct-to-user tool service is available through 35 factory branches located in key production centers. Write for catalog.

SNAP-ON TOOLS CORPORATION, 8042C 28th Avenue, KENOSHA, WISCONSIN

▲ Mention Item NED-1260-A when writing ▲

THERE'S A NEED FOR THE

CM COMET

IN EVERY MANUFACTURING PLANT

5 Capacities from ½ ton to 1 ton. Priced from $130.

For the fast and economical overhead handling of materials in process of manufacture or assembly, the light weight CM Comet Electric Hoist offers some outstanding features. All working parts are fully enclosed and permanently lubricated . . . operates on 220 or 440 volt power line or 110 volt lighting circuit . . . low headroom . . . one hand control . . . overload tested . . . safety guards . . . heavy duty motor and controller . . . Herc-Alloy double duty chain. Get *all* the details of *all* the advantages by writing today for Bulletin No. 138.

CHISHOLM-MOORE HOIST CORP.

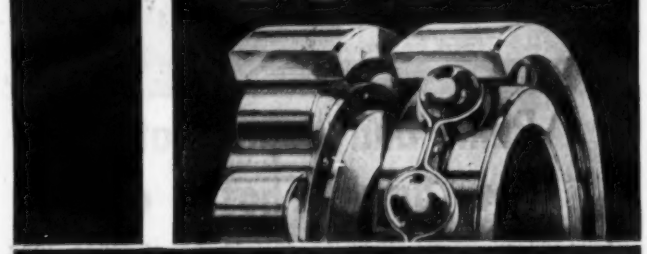
Affiliated with Columbus-McKinnon Chain Corp.

General Offices and Factories: 114 Fremont Avenue, Tonawanda, N. Y.

Sales Offices: New York, Chicago and Cleveland

▲ Mention Item NED-1262-A when writing ▲

TWIN PRECISION



"NORMA-HOFFMANN"

BALL & ROLLER BEARINGS

for any

LOAD-SPEED or DUTY

ASK FOR CATALOG AND ENGINEERING COUNSEL

NORMA-HOFFMANN BEARINGS CORPORATION STAMFORD CONN. U.S.A.

▲ Mention Item NED-1263-A when writing ▲

. . . and don't "flirt" with dust hazards either! Thousands of workers in industry everywhere have found the best defense against dust is DUPOR Respirators. The one pictured here is . . .

DUPOR "Automatic"

Cloth and sponge filter type. The wet sponge provides cool, comfortable breathing for wearer. Universally used for nuisance dusts, paint spray, fumes and smoke. Sample sent $1.65 postpaid.

"This is our Golden Jubilee Year, 1894-1944"

H. S. COVER, Chippewa St., South Bend, Ind.

▲ Mention Item NED-1264-A when writing ▲

AIR OPERATED CHUCK

Especially designed for holding odd shaped parts, this two-jaw compensating finger chuck features Air-grip operating mechanism. Made in various sizes, these units are available for second operation work which must be concentric with locating surface within extremely close limits.

Model shown is arranged so that work is located from finished round shoulder on bottom of casting and by two hardened and ground pins which also serve as drivers. Plate on face of chuck is hardened and ground. Two jaws are so designed that either one may pull in farther than the other to compensate for varying thickness of rough surface work pieces. Chuck body is made for direct mounting on any American Standard spindle nose, but it can be mounted on any spindle using adaptor. Made by Anker-Holth Mfg. Co., 332 S. Michigan Ave., Chicago 4, Ill.

▲ Mention Item NED-1267-A when writing ▲

EXTRUSION MACHINE

Designed to aid laboratory and experimental work in wide range of extrusion processes, this combination machine is composed of laboratory type 12-ton hydraulic extrusion press and automatic wire feed unit. Entire unit occupies only 2 x 4 feet of floor space. It is of welded steel construction throughout.

While designed primarily for extrusion of welding rods, press may be had with dies for extruding powdered metals, carbon and certain plastics. Combination unit is so designed that press can be sold without wire feeding unit. Machine offers wide range of speeds on oil cylinder. Pressure of 10,000 pounds per square inch on material is achieved, which combined with automatic wire feeding, makes machine suitable for small scale production of welding electrodes. Separate cylinder is used for slugging, so that slugs can be preformed in quantity if desired. Extrusion die-head is of new design at 45 degree angle. Deflection in wire guide is said to be minimized by this design because flux is forced in direction more in line with wire guide. This is claimed to eliminate some of trouble normally encountered in extruding with right angled die heads.

Unit is shipped complete, including extrusion die head, ready to set on laboratory or factory floor and to connect to power line. Hydraulic and electrical controls are located in panel at operating end with pressure gage with reading in direct pressure on extrusion cylinder always in view of operator. Made by Moslo Machinery Co., 2443 Prospect, Cleveland, O.

▲ Mention Item NED-1268-A when writing ▲

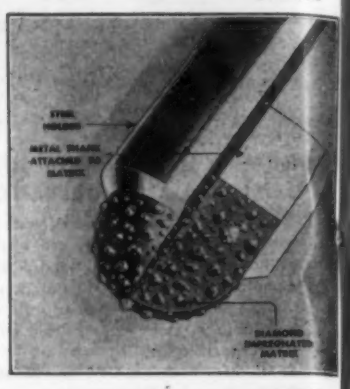
YOU CAN'T LOSE THE DIAMONDS OUT OF THIS DRESSER

QUARTER SECTION VIEW OF DRESSER

You can't lose the diamonds out of a Carboloy Diamond-Impregnated wheel dresser because they are permanently embedded in a special Carboloy matrix—held firmly throughout a long, useful life. This permanent mounting means greater diamond utilization per carat, and no resetting expense.

These dressers are available in 3 sizes, each suitable for rough, semi-finish and finish dressing operations.

Reasonably priced—Send for catalog DR-100



CARBOLOY COMPANY, INC.
11167 E. 8 Mile Rd., Detroit, Mich.
Chicago, Cleveland, Los Angeles
Newark, Philadelphia, Pittsburgh
Seattle, Worcester, Mass.

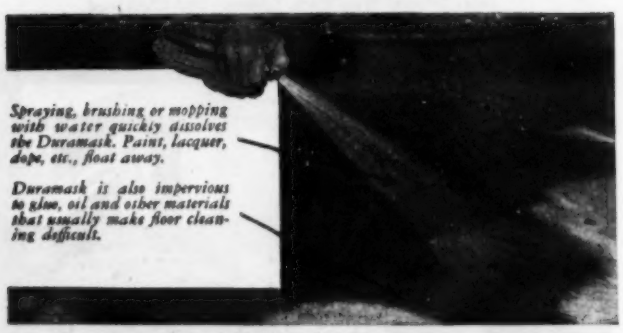
CARBOLOY CEMENTED CARBIDES
FOR THE MANUFACTURING · MINING · TRANSPORTATION · CONSTRUCTION INDUSTRIES

▲ Mention Item NED-1270-A when writing ▲

YOU'LL WANT A COPY OF THIS *New Catalog* IF YOU USE THESE ITEMS

MACHINE PRODUCTS CORPORATION
6763 E. McNichols Road • Detroit 12, Mich.

▲ Mention Item NED-1265-A when writing ▲



Paint and dope spatter now quickly hosed off!

Paint and doperoom clean-up is *no problem now!* Turco *Duramask* ends slow, costly scraping or scrubbing with dangerous solvents. *Duramask* catches spray and spillage. Water alone quickly washes all away.

Simply brush *Duramask* on floors, walls, etc. It dries in a few minutes to a white, non-slip surface that is tough, long wearing, and which reduces danger from sparks.

Turco *Duramask* is odorless, harmless to user and clothing, inexpensive. Used in large quantities in aircraft plants and elsewhere. Let it save you time, labor, money.

Write for Bulletin NED-3

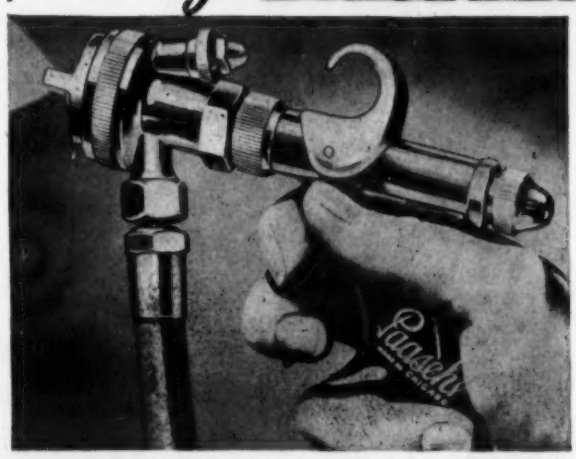
Turco PRODUCTS, INC.

SPECIALIZED INDUSTRIAL CHEMICAL COMPOUNDS

Main Office and Factory: 6135 S. Central Ave., Los Angeles 1 • *Southern Factory:* 1606 Henderson St., Houston 10, Tex. • *Chicago Factory:* 125 W. 46th St., Chicago • *Service-Men and Warehouse Stocks in All Principal Cities*

▲ Mention Item NED-1266-A when writing ▲

Finish the job FASTER! *with* PAASCHE AIRPAINTING EQUIPMENT



HOW THIS CUB HIGH-PRODUCTION AIRBRUSH SPEEDS AIRPAINTING

In aircraft plants, shipyards and other war industries, this Paasche Airbrush "Maximizes" Finishing Production in three ways:

1. Greater Coverage. Rapid Application with perfect atomization and spray pattern. Quality finishing at topspeed.
2. Easier Handling with less fatigue, due to light weight (only 22 oz.) perfect balance and handmolded grip. Ideal for women, too.
3. Less Time Out for Maintenance, due to Quicker, Easier Cleaning and Sturdier Construction. Working parts fully enclosed in machined brass body.

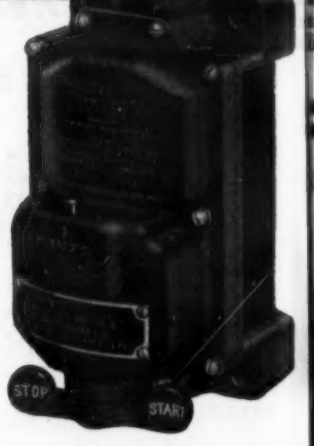
Write for Bulletin FM 9-42 today. Paasche Airbrush Co., 1949 Diversey Pkwy., Chicago 14, Ill. Paasche Airbrush (Canada) Ltd. 154 Vaughn Road, Toronto.

Paasche AIRPAINTING EQUIPMENT

▲ Mention Item NED-1269-A when writing ▲

SNAP-LOCK

MOTOR STARTER SWITCH



Proved under Fire!

The newest anti-aircraft guns of the U S Navy are equipped with SNAP-LOCK Motor Starter Switches—a service where there is no room for failure under any conditions.

This is all the proof you need that this tried and proved switch—case, working parts, insulation and contacts—will stand up and perform wherever you put it, new machines or replacements.

Send for Bulletin EM-45. It gives you complete details on this 100% dependable switch—built by machine tool builders for machine tool builders.

ELECTRICAL MANUFACTURING DIVISION
NATIONAL ACME
CLEVELAND, OHIO

▲ Mention Item NED-1271-A when writing ▲

Safe MAGNESIUM DUST Control

WITH
ROTO-CLONE
TYPE N

To meet all requirements of safe handling of magnesium dusts AAF has developed the type N ROTO-CLONE which precipitates the dust under liquid and stores it as sludge. Available as large and small units for collection of dust at individual stands or for service with central system exhaust.

BUY WAR BONDS

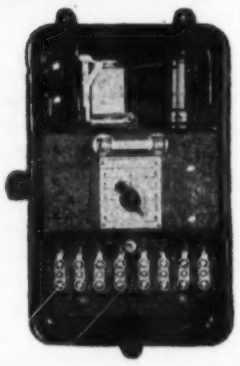
If you have a magnesium dust problem write for ROTO-CLONE Bulletin No. 277, which will be sent without obligation.

AMERICAN AIR FILTER CO., INC.
INCORPORATED
391 CENTRAL AVE. LOUISVILLE, KENTUCKY
IN CANADA, DARLING BROTHERS, LIMITED, MONTREAL, P. Q.

▲ Mention Item NED-1272-A when writing ▲

ELECTRONIC Short Interval Timing

1/20 Second to Two Minute Range with One Control — Unlimited-Life Accuracy



PHOTOSWITCH Timer Type T15U times any interval from 1/20th of a second to two minutes. Insertion of proper timing valve gives 6-range control within these limits. Electronic operation eliminates moving parts, friction, wear — guarantees complete accuracy over an unlimited period.

TYPE T15U PROVIDES:
- Interval or Time Delay Action.
- All Programming, Cycling, Sequencing Operations.

Consult us on your timing problems.
Write for Bulletin 901-A.

PHOTOSWITCH INCORPORATED
PHOTOELECTRIC & ELECTRONIC CONTROLS FOR EVERY INDUSTRIAL PURPOSE
CAMBRIDGE, MASS. *District Offices* IN ALL PRINCIPAL CITIES

▲ Mention Item NED-1273-A when writing ▲

HELLER NUCUT U.S.A.

MORE CUTS WITH NUCUTS

YOUR WAR-TIME FILE . . . TO speed repairs

Are you, too, now fixing up old things and making them do for the duration? Then a NUCUT is the file for you. It speeds repairs and overhauls.

A trial will convince you — whether you are working on metal, fibre, wood or slate. Because of its patented "Wavy Teeth" design, scientifically combining coarse and fine teeth in patented wavy rows, it cuts deep, clean, true, fast — AND finishes the surface smooth. BOTH at the same stroke!

See your supplier for the lengths, shapes and cuts you need.

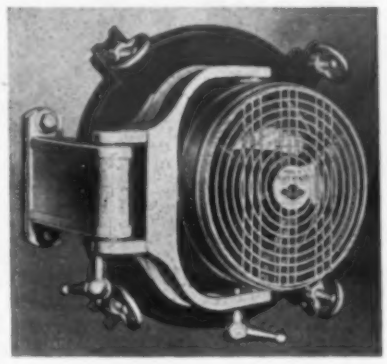
HELLER BROTHERS COMPANY
America's Oldest File Manufacturers
Newark, N. J., Newcomerstown, Ohio

Awarded to the Newcomerstown, Ohio, Plant.

HELLER NUCUT WAVY TEETH FILES
PAT. NO. 2027039

▲ Mention Item NED-1274-A when writing ▲

PORTHOLE VENTILATOR



Affording triple duty aboard ship, this Portavente unit fits quickly and snugly into porthole. In one position it pulls in outside air for comfort of passengers and crew. By means of hinged supporting arm, complete fan unit can be reversed 180 degrees easily to exhaust stale air, smoke or odors. Convenient handle facilitates quick changing of position. By third adjustment of supporting arm and hinge, fan unit swings back out of porthole and locks into any desired position for use as circulating fan.

For blackout protection, unit has weatherproof deadlight adaptor panel which fits into porthole and fastens with tumble bolts from inside. Panel is instantly removable when portholes must serve as escape hatches. Die-formed louvers prevent transmission of light with minimum restriction to air flow. Units are built to withstand shocks, stresses, strains and high winds encountered at sea.

Model A illustrated is designed for 16-inch portholes. Other sizes will be made available as they are required. Exhaust capacity is 350 cubic feet per minute, supply 360 cubic feet per minute and recirculation 660 cubic feet per minute. Drive is by totally enclosed, splashproof 1/80 horsepower direct current motor. Remotely located two-speed controller may be used to vary air circulation in accordance with needs. Made by Ilg Electric Ventilating Co., 2863 N. Crawford Ave., Chicago 41, Ill.

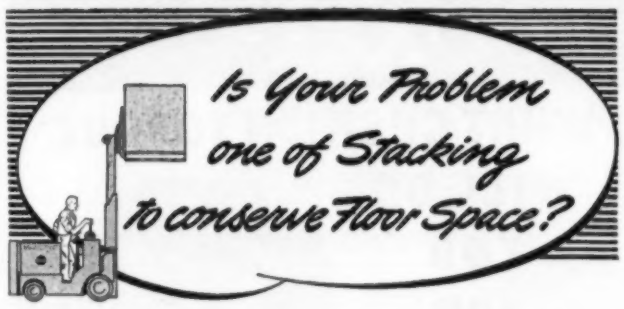
▲ Mention Item NED-1275-A when writing ▲

VOLTAGE REGULATOR

Developed for aircraft applications, series VR-2200 carbon pile voltage regulators are claimed to dissipate 300 to 400 per cent more power than conventional designs, occupying same chassis space and with 8 per cent less cubic volume. Units will handle 100 watts in pile with air flow through fins of approximately 25 cubic feet per minute and 50 to 75 watts without air blast. Piles can be provided with resistance range on order of 20 to 1, total range of maximum values being from less than 1 ohm to about 100 ohms.

Many different applications are possible. In one, resistance of carbon pile is in one side of line and regulator operates to vary this resistance automatically so as to produce constant voltage across load. In another typical use, regulator varies field excitation of inverter, alternator or special dynamotor so as to produce constant output voltage across load. Where machine is delivering alternating current, rectifier may be provided to supply regulator solenoid current. Made by Webster Products, 3827 W. Armitage Ave., Chicago 47, Ill.

▲ Mention Item NED-1276-A when writing ▲



Hundreds of plants and warehouses have solved this and other material handling problems with Baker Trucks. So that you may profit from their experiences, a large part of our new catalog has been given over to actual installation stories. This new book is designed to facilitate selection of the proper equipment for any set of requirements. It describes the 47 standard Baker electric trucks, also many special models for unusual handling operations.

Write for your copy of the new Baker catalog

Any executive concerned with material handling will find this book a valuable source of information. Write for your copy today.

BAKER INDUSTRIAL TRUCK DIVISION of the Baker Raulang Co.
2179 WEST 25th STREET • • CLEVELAND, OHIO
In Canada—Railway and Power Engineering Corporation, Ltd.

Baker INDUSTRIAL TRUCKS

▲ Mention Item NED-1277-A when writing ▲

Speedy Carburizing of Small Parts By The HOMOCARB METHOD

The parts shown above are "aircraft fasteners". They are formed by cold-heading, and after annealing require a carburized case, just thick enough to protect the screw-slot during the application of the fastener to the aircraft part it is to pin into place. This typical mass-production job of carburizing is an ideal one for the Homocarb Method, because Homocarb action is so uniform while the load is coming up to the soak temperature, that it can be quenched almost as soon as the soak is reached. The operation is speedy, and the fasteners emerge well inside the hardness limits, yet with no scaling or pitting.

Homocarb is equally applicable to deep carburizing of small or large parts. If you want further details, ask either for an L&N engineer or a copy of Catalog T-623.

LEEDS & NORTHRUP COMPANY, 4985 STENTON AVE., PHILA., PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad T-623 (16a)

▲ Mention Item NED-1278-A when writing ▲

GEARS... GUNS... AND MEN!

Today's victories of our armed forces are the result of their superior fire power on land and sea . . . and in the air — a superiority attained by design engineers working in conjunction with the army and navy ordnance departments. Victory and success depend on gun calibre and range . . . also its maneuverability and the clock-like precision of the firing mechanisms. . . . D.O.James precision-made gears are important controlling factors in attaining the maximum fire power and efficiency of many of the guns now being so successfully used by our armed forces. . . . Accurately conforming to these design requirements has been an every-day "must" in our organization for over 55 years in the design, engineering and manufacture of all types of gears and gear speed reducers.

D.O.James
ESTABLISHED 1888

D.O.JAMES MANUFACTURING CO.
1140 W. Monroe St., Chicago, U.S.A.

▲ Mention Item NED-1279-A when writing ▲

YORK ELECTRIC

SCOTCH TAPE PRINTER

This machine is especially designed to print standard "Scotch" tape in a manner which makes it impervious to gasoline and oil. The printed surface is guarded against friction, and cannot be scraped or rubbed off. With this equipment in your plant, new codes may be set up by your own operators within a few minutes time. No troublesome delays in obtaining any combination of numerals or letters printed right in your own plant.

$175 to $375

New code markings for Aircraft wire terminals available instantly. This new Tape Printer, just developed for the Aircraft Industry, has met immediate approval.

YORK TOOL SALES CO. 1241 W. King St.
YORK, PA.

▲ Mention Item NED-1284-A when writing ▲

PUT AIR TO WORK!

FOR VACUUM OR PRESSURE

with a MOTOAIR PUMP

AS A MACHINE ACCESSORY
PAPER-HANDLING
CLEANER-BLOWER
FOR AIR VICES
AIR PISTONS & GAUGES

Motoair packs a deal of power in a compact, long-life unit suitable for a wide range of uses. Less parts to wear out; visible lubrication. Prompt shipments assured.

NEW JERSEY MACHINE CORPORATION
13th Street & Willow Ave., Hoboken, N. J.

▲ Mention Item NED-1285-A when writing ▲

Manpower or Horsepower?

For moving industrial loads, manpower is slow and costly . . . horsepower is much faster, more convenient and less expensive. Use the Truck-Man for skidded loads of one ton and under . . . gasoline power . . . hydraulic lift . . . easy to operate. Used by government agencies and in private industry.

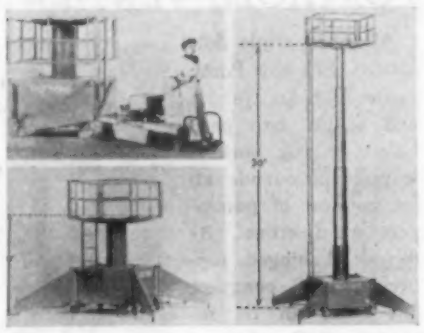
Send for descriptive literature.

Priced at $600.00 F.O.B. Jackson, Michigan

truck-man
a product of
YARD-MAN, INC.
1414 WEST GANSON
JACKSON · MICHIGAN

▲ Mention Item NED-1286-A when writing ▲

PORTABLE ELEVATOR



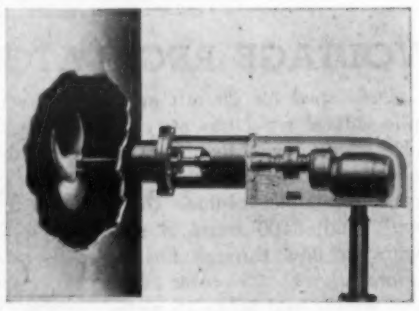
Capable of being set up for operation quickly anywhere inside or outside of buildings where electric power is available, this portable elevator will raise loads weighing up to 3000 pounds to height of 30 feet. Designed for heavy duty service, unit can be towed easily by small industrial truck and will pass through 6-foot wide aisle and doorway 8 feet high. Unit may be designed for heavier or lighter loads, if required.

Lifting speed is 20 feet per minute when loaded. Elevator consists of fabricated steel base housing hydraulic oil tanks, pumps, motors and controls; outriggers for holding unit stationary; telescoping hydraulic cylinders and 6 x 6 foot work platform. Outriggers are hinged to base and all four must be in extended position before elevating mechanism will operate. They remove load from wheels and hold equipment steady during use. Two front wheels are swivel mounted and all four wheels have Timken roller bearings.

Safety features including sealed valve which prevents operation of unit if elevator is overloaded beyond rated capacity. Simple 3-button switch on platform affords full control of elevator operation. Hydraulic cylinders will operate even when load is off center. Elevator guard rails may be lowered for passing through 6 x 8 foot openings. Made by **Hufford Machine Works,** 315 Diamond St., Redondo Beach, Calif.

▲ Mention Item NED-1287 when writing ▲

SIDE-ENTERING AGITATOR



Capable of being repacked from outside without need for draining of tank and without loss of liquid, this side-entering agitator is available in sizes from ½ to 30 horsepower. Unit has been redesigned so that all thrust is removed from motor bearings by means of roller bearings operating against ring attached to shaft. Use of undercuts prevents leakage from entering bearings, thus adding to their life and eliminating need for special lubricants.

Equipment is completely weatherproof, with all moving parts protected from the elements. It can be installed in exposed out-of-door locations without need for special housing. Motor and base are mounted integrally with agitator and unit has adjustable support under motor base. Hinged weatherproof cowl permits easy access for maintenance or checking.

External packing gland is used. Seal which is attached to shaft inside of tank may be drawn into seat, hermetically sealing off contents of tank. This permits repacking while tank is full and no liquid is lost. Tests made under much higher pressures than ordinarily encountered are claimed to have shown complete sealing of kerosene and other liquids. Made by **H. K. Porter Co.,** 4957 Harrison St., Pittsburgh 1, Pa.

▲ Mention Item NED-1288 when writing ▲

LOOK---

WHAT CUSHION TORQUE WILL DO FOR YOU

These flexible couplings not only protect you against the evils of misalignment, but they also develop a long-lived CUSHION TORQUE that protects your Motors and Machines against the wear, vibration and fatigue that are the causes of most machine failures. No other coupling is like the KANTI-LEVER: it has a circular series of RADIAL RESILIENT CANTILEVERS made from 200,000 lb. steel. End thrust is impossible. Leverage on the Cantilevers decreases with increased load and prevents backlash. Special end play obtainable up to four inches without increase in Cantilever stresses. Outer periphery can be used as a brake drum for quick-stopping machinery. Over 3,000,000 H.P. in service. SEND FOR BULLETIN No. 28-D.

Kanti-lever Coupling

BROWN ENGINEERING CO. 129 N. THIRD ST. READING, PA.

▲ Mention Item NED-1289 when writing ▲

"WHEN WOMEN WELDERS WEAR COMFORTABLE AO CLOTHING THEY FEEL LIKE WORKING"

These good looking clothes come in welder's leathers with a rich, soft suede appearance. And they're specially tailored to a woman's taste. Notice the trim fit? These clothes make women feel like working. Free-action lines help women welders to move around quicker with less effort. Tough, long-wearing chrome tanned cowhide gives better protection . . . helps *keep* women on the job.

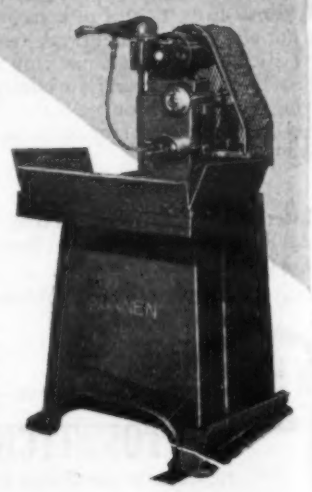
Help your women welders work *easier.* Dress them up in AO style. AO's smart line of welders' clothing includes Tailored Coats, Short Jackets, Overalls, Sleeves, Aprons and a Turban to protect women's hair and ears while welding. Your nearest AO Branch Office can give you full details. Get in touch with them today.

American Optical Company
SOUTHBRIDGE, MASSACHUSETTS

▲ Mention Item NED-1290 when writing ▲

More Accurate Internal Finishes

in Less Time—at a Lower Cost—With the Sunnen Precision Honing Machine



This popular, low-cost machine is guaranteed to hone internal cylindrical surfaces to within .0001" and produce a super-smooth finish of 2 to 3 micro-inches. In actual practice, *accuracy has been held to within .000025" on production jobs.*

In addition, production has been increased *—in some instances up to 500%—*with fewer rejects and absolute interchangeability of parts.

Wide range—handles internal diameters from .185" to 2.625". Corrects errors of out-of-roundness or taper caused by previous operations. Facilitates duplication of sizes. Does not require skilled labor. Write for free bulletin.

SUNNEN PRODUCTS CO. 7931 Manchester Ave., St. Louis, Mo.
Canadian Factory, Chatham, Ontario

SUNNEN

Typical Jobs

Compressor Yoke. Alignment maintained and better finish produced.

Roller Bearing Outer Race. Finish improved from 12 micro-inches to 2 micro-inches.

Header Die. Life of header dies increased 3 to 9 times over lapping. Knock out pin breakage practically eliminated.

Shell Loading Die.

Aircraft Carbureter Operating Valve Sleeve. Sunnen honing eliminates distortion from assembling operation.

Stainless Steel Load Compensator Valve Seat. Hole is honed to .0002" limit.

Bearing. A very small part. 2 micro-inch finish necessary.

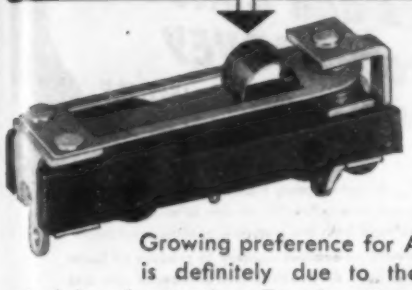
Hydraulic Control Bushing. Honing gives straight round hole after rough reaming.

Cast Iron Valve Stem Guide. ½ to one thousandth removed—220 pieces per hour. Better finish and straighter hole.

Aircraft Valve Tappet Roller. Honed after grinding to give 100% bearing surface.

▲ Mention Item NED-1291 when writing ▲

STUDY
THE ROLLING SPRING



The Greatest Thing in Snap Action Switches

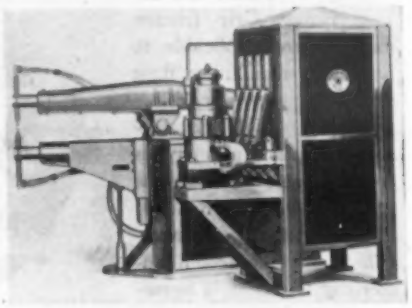
Growing preference for ACRO-SNAP Switches is definitely due to the ROLLING SPRING principle of actuation. Two beryllium springs are locked together so as to compel one spring to "Trigger" the other. The contact break is more nearly instantaneous. Friction is eliminated and firmer contact pressure maintained. Approved by U. S. Army Air Forces after Winterization tests and adopted by leading builders of war equipment. Write for special bulletin on Model G. Midget.

Open Blade Switch

ACRO ELECTRIC CO. 1312 SUPERIOR AVENUE CLEVELAND 14, OHIO

▲ Mention Item NED-1292 when writing ▲

BATTERY OPERATED WELDER



Claimed to be the first practical direct current resistance welder using storage batteries as power source, this machine is designed for industrial applications. Equipment is already in use, welding aluminum for aircraft. It makes possible application of resistance welding, even in aluminum, in localities where power supply limitations have prevented use of other forms of stored energy welding machines.

Advantages stated are elimination of inductive losses in welding "loop" by use of direct current; elimination of reactance losses between power supply and electrodes; less critical adjustments required to obtain consistently good welds, and operating and maintenance simplicity.

Rocker arm, pedestal and gun type or resistance welders may be used in combination with storage battery power unit. Power to keep batteries charged is supplied from normal power line which may be single or 3-phase alternating current. Charger is dry-disc type rectifier, equipped with automatic controls. Only simple non-synchronous sequence welding control is needed in conjunction with automatic pressure switch and starting foot pedal switch to control welding cycle.

In addition to operating advantages, high degree of safety is provided because of storage battery power. Equipment can be operated from conventional power lines instead of requiring thousands of volts as in condenser-discharge types. Made by **Progressive Welder Co.**, 3025 E. Outer Drive, Detroit 12, Mich.

▲ Mention Item NED-1295 when writing ▲

REMOVE SCALE, PAINT, RUST Quickly . . . Easily . . . Use

AURAND
CLEANING TOOLS

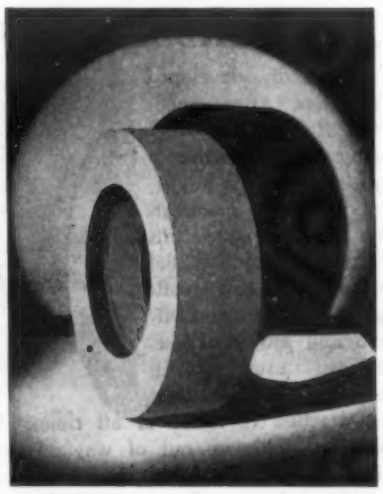
It's easy to remove paint, scale, rust and other accumulation with AURAND Cleaning Tools. Powered, rotary chipping does a thorough cleaning job in less time. No special skill required. Even depth surface is assured by an adjustable shoe control. Cutter heads are renewable.

For Further Information Address Dept. 14

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

▲ Mention Item NED-1298 when writing ▲

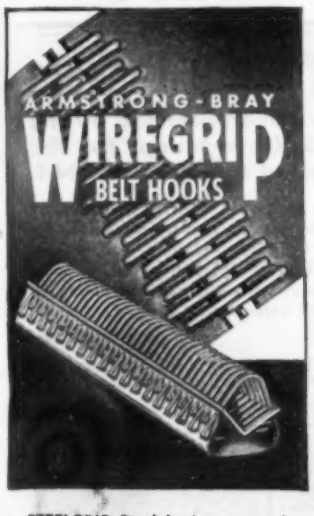
ALUMINUM OXIDE WHEELS



Now available for general use, 57 Alundum wheels are made with BE vitrified bond as well as standard vitrified bond in wide range of grain sizes, grades and structures. Because production facilities were limited at time these wheels were first successfully applied for cylindrical grinding, centerless grinding, internal grinding and slow speed snagging, they were not available generally. Production capacity has been increased so that use of wheels is no longer limited to critical war work.

Abrasive is more friable than regular Alundum. Wheels have fast, cool-cutting action because they tend to keep themselves sharp. They are claimed also to hold shape and require but few dressings. Wheel corners hold up well for such applications as crankshaft grinding. Made by **Norton Co.**, 200 New Bond St., Worcester, Mass.

▲ Mention Item NED-1296 when writing ▲



Prompt Delivery! —on both types

With its new modern plant and multiplied capacity ARMSTRONG-BRAY & CO. can give prompt delivery on *both* standard types of belt lacing. WIREGRIP Belt Hooks with the patented ARMSTRONG-BRAY blue aligning cards hold every hook in perfect alignment, preventing hook loss from handling or waste of short card ends. (6 sizes).

● STEELGRIP Steel Lacing comes in 8 sizes, in convenient boxes or long lengths for wide belts. Especially recommended for rubber and fabric belts for it compresses belt ends and prevents fraying. Applied with a hammer, STEELGRIP penetrates belt easily, clinches securely and smoothly. 2-piece hinged rocker pins increase flexibility and reduce wear. (8 sizes).

WRITE FOR CATALOG

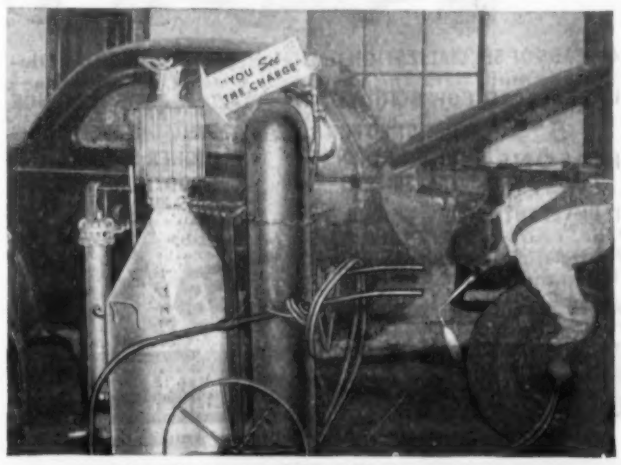
ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5362 Northwest Highway
Chicago 30, U. S. A.

▲ Mention Item NED-1293 when writing ▲

JALOPIES? NO! CRITICAL TRANSPORTATION!

● REMEMBER WHEN a lot of folks traded in their cars for new ones *every year?* And the venerable age of two or three winters automatically assigned the ole family bus to the *jalopy* class? But not so today. America's *newest* cars are now observing their *third* birthday. Jalopies? No—*critical transportation*—with native ingenuity and a welding torch to keep 'em rolling to and from the war plants. (And the welding torch performs more economically if hooked to a Sight Feed Acetylene Generator—famous source of purer, hotter acetylene gas at savings up to 75%.)

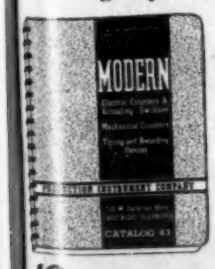
THE *Sight Feed* GENERATOR COMPANY
Sales: Richmond, Indiana • Factory: West Alexandria, Ohio



▲ Mention Item NED-1299 when writing ▲

REMOTE PRODUCTION CONTROL

Wizard Electric Counters grouped on a panel.



Wonderful improvements in production control efficiency with important savings in time and materials *are effected thru flexibility of application* afforded by Wizard Electric Counters.

Wizards count *anything* that will actuate a switch, relay or photo-electric unit. They may be installed *at any distance* from the source of count.

A panel of Wizards can be arranged to *give a continuous, up-to-the-second count* on varied operations thruout the plant. Every production man should have complete information. Catalog on request.

Production Instrument Company
700-12 W. JACKSON BLVD. CHICAGO 6, ILL.
Manufacturers of Counting, Timing and Recording Devices

▲ Mention Item NED-1294 when writing ▲

JOHNSON METAL CUT-OFF BANDSAW

Metal sawing is a more efficient operation with the Johnson Saw. Designed for quick set-up; adaptable to practically every kind of cutting job. 3-point base for anchorage on uneven flooring.

Write today for descriptive folder to Sales Office:
JOHNSON MANUFACTURING CORP.
5004 CHRYSLER BLDG., NEW YORK

Wet-Cutting Model Also Available for Ultra High Speed Metal Cutting

▲ Mention Item NED-1297 when writing ▲

▲ Mention Item NED-1300 when writing ▲

Listen—I Get My DURAL Automatic Screw Machine Parts!

WHERE? READ COLUMN THREE

▲ Mention Item NED-1301 when writing ▲

IT'S GORTON FOR Super-Speed END MILLS

40 YEARS OF SPECIALIZATION in High Speed End Milling, Die-Sinking and Engraving have made GORTON End Mills—UNEXCELLED FOR SMOOTH, *TIME-SAVING* PERFORMANCE

5 REASONS WHY
1. DESIGNED FOR *Super-Speed* MILLING OPERATIONS
2. GREAT STRENGTH
3. FASTER FEED
4. HIGHER SPEEDS
5. SMOOTH BOTTOM CUT

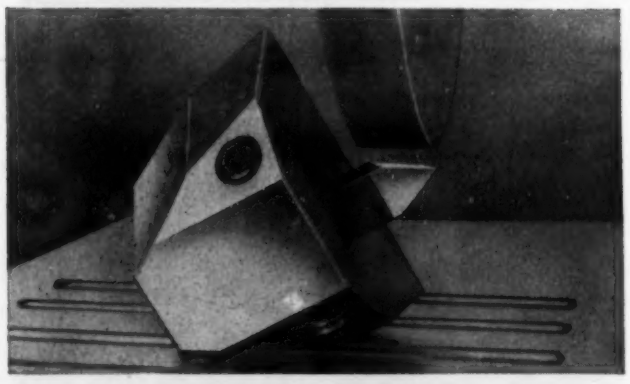
12 DIFFERENT STYLES—from 1/10" to 1" diam. One, Two or Four Flute, Single or Double End . . . also Diamond and Tungsten Carbide Cutters.

FREE

WRITE FOR FREE CATALOG NO. 1317-D
For Complete Information and Prices

GEORGE GORTON MACHINE CO.
1103 13TH STREET, RACINE, WISCONSIN, U. S. A.

▲ Mention Item NED-1302 when writing ▲



PRECISION GRINDING SIMPLE WITH THE *NEW* CLARK THREAD TOOL GRINDING FIXTURE

This fixture insures accuracy and uniformity in grinding National 60° and Acme 29° thread tool bits. With this fixture, bits are right the *first* time . . . thus saving labor. Magnetic chuck convenient but not necessary. Two standard sizes available for tool bits from 1/8" to 3/8". Model A for the mechanic's own tool kit . . . and Model B for the shop. Special Model C for grinding Clark Hole Cutter Blades.

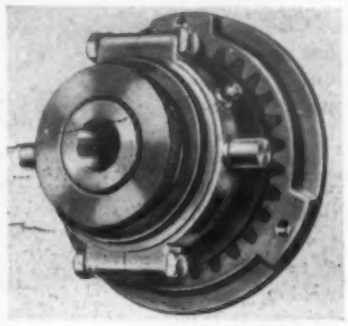
Order from your jobber today or write for Bulletin NED-3

In Canada: DOMINION BEARINGS, LTD., Toronto, Montreal, Winnipeg
Export: THE AMERICAN STEEL EXPORT COMPANY, INC., New York, Los Angeles

Robert H. Clark Company
9330 Santa Monica Boulevard • Beverly Hills, California

▲ Mention Item NED-1303 when writing ▲

DISC TYPE CLUTCH



Easy to operate and adjust, Rolling-Grip friction clutches are applicable to packaging machinery, floor scrubbers, paper handling, wrapping, food processing, textile and other types of equipment where power requirements are relatively small. They are available with 3½-inch diameter disc rated at ½ horsepower at 100 revolutions per minute or 4½-inch diameter disc rated at 1 horsepower at 100 revolutions per minute.

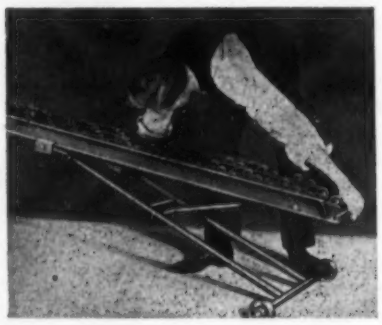
In operation, number of highly polished hardened steel balls are forced into V-shaped groove by hardened steel cam. Forcing balls toward center of shaft widens groove. This application of basic principle of inclined plane or wedge produces heavy power transmitting pressure on friction surface. Wear parts are reduced to minimum.

Adjustment is controlled by threaded collar which is locked in place by two setscrews. With clutch engaged, two setscrews are loosened and adjusting nut is tightened up as firmly as possible by hand. Clutch is then disengaged and adjusting nut is tightened fraction of turn. Setscrews are then tightened to lock adjustment.

Clutch is easily adapted to any required operating condition. It may be provided with gear tooth friction disc and drive ring or with bolted friction disc for dry applications. If required to run in oil, asbestos fiber discs may be replaced with number of thin metal discs. Cam and thrust ring contours may be altered to change clutch characteristics. There are no exposed operating parts. Smoothly finished die castings are used for slip ring and drive ring. Made by Dodge Mfg. Co., Mishawaka, Ind.

▲ Mention Item NED-1304 when writing ▲

ADJUSTABLE CONVEYOR



Originally developed to meet Army needs for lightweight, fully portable conveyor which could be adjusted readily to practically any height, this Cam-lock Rapid-Wheel conveyor is now available for essential civilian and industrial use. Special cam locking standard is permanently attached to frame at all times. When not in use, this standard folds up out of way. When assembling conveyor line, it is only necessary to lift end of conveyor to required height and press down cam locking levers.

Conveyor section is self-contained and self-supporting. Standards support each section and are equipped with easy rolling wheels so that setting up line is simplified. Height may be set at any amount up to 50 inches, thus permitting practically any degree of pitch which may be required for gravity delivery. Made by Rapids-Standard Co., 8535 Bond Ave. N. W., Grand Rapids 2, Mich.

▲ Mention Item NED-1305 when writing ▲

semi-automatic print production with one operator

Semi-automatic in action, this Bruning "75-159B" Volumatic Printer-Developer assures big volume production of Bruning Black and White (black line) Prints with a single operator. Operator merely feeds unexposed BW paper into the machine—prints are immediately exposed and patented vacuum separator roll separates tracings from exposed prints. The tracing is returned to operator while the completely developed print is delivered flat and dry at the rear of machine. Current consumption of machine only 39 amperes. Machine is especially compact, requires no plumbing connections or special wiring. Write us for full information. CHARLES BRUNING COMPANY, INC.

BRUNING
SINCE 1897
NEW YORK • CHICAGO • LOS ANGELES
Branches in 14 Principal Cities 2288-334

▲ Mention Item NED-1306 when writing ▲

You Can Get DURAL Automatic Screw Machine Parts, Nuts and Bolts-from HARVEY IN QUANTITY—ON SCHEDULE

Yes sir, if you're having trouble getting DURAL Automatic screw machine parts, nuts and bolts, we can solve that problem for you . . . because we have both the materials and the machines.

With 112 spindles, we have *tremendous capacity* to produce all Dural automatic screw machine parts of any kind, and all sizes of nuts and bolts from 3/8" up, round or hexes, blank or finished. We can positively match any production schedule or price in the world, because we have modern high-speed equipment that turns out top quality parts in the shortest time.

If you are a prime or subcontractor and want Dural automatic screw machine blanks or finished parts, we are just the people who can fill your order. *And quickly.* Prices reduced for large quantities.

Phone, wire, or write your requirements.

"for three decades serving America"

HARVEY MACHINE CO., INC.
6200 Avalon Blvd. Los Angeles 3, California
DIVISIONS • MACHINERY • AUTOMOTIVE • ELECTRONICS • OIL TOOL SUPPLIES • HOUSEHOLD UTILITIES

▲ Mention Item NED-1307 when writing ▲

NYWOOD LOCKERS

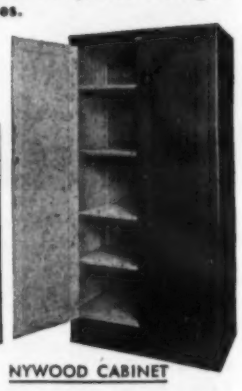
NYWOOD Lockers have been selected by the U. S. Government for the general schedule of 1944.

★

Nywood is the modern substitute for steel in lockers, cabinets, tool stands, shelving, etc. More than 100,000 lockers in use, some buyers reordering 50 and 60 times.

Send for Literature

Nywood products are built of sturdy plywood, made termite-proof, resistant to fire and protected against salt water, weather and odors through immersion in special solution. Tough, lacquer exteriors, office green. Interiors, tops and bottoms neutral tone finish resulting from processing solution. Complete line of sizes and sectionizing. Easy assembly. Attractive prices.



Send us your inquiries about NYWOOD CABINET

SHOP ITEMS IN STEEL

We will be able to supply you with these items as they are released from time to time by the U. S. Government and will be glad to keep you posted.

NYCE Metal Products Company
4308 N. Broad St., Phila., Pa. . Phone MIChigan 6463

▲ Mention Item NED-1308 when writing ▲

Watch how materials GET GOIN' on EWC TRAILERS!

In-coming and out-going materials and products move faster, surer, safer, on EWC Trailers. Engineered to do the job right, EWC Trailers embody 90 years of practical experience in helping many types of industries solve their Materials Handling Problems.

Let us help you. Write today for Illustrated Bulletins and full details.

Electric Wheel Co.
Dept. N.
Quincy, Ill.

EWC TRAILERS

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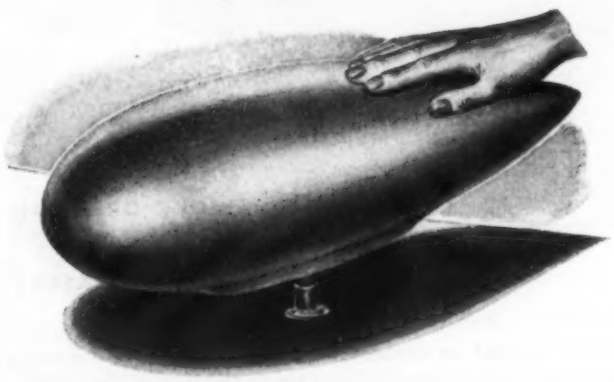
XLO
EX-CELL-O for PRECISION

EX-CELL-O CORPORATION
DETROIT 6, MICHIGAN

▲ Mention Item NED-1310 when writing ▲

BAKELITE

TRADE MARK



"A CLOTH EGG" from which new industries may be hatched

WHAT APPEARS to be an egg in the illustration, is actually an aircraft antenna loop housing used on our military aircraft. It is made from cloth impregnated with BAKELITE Laminating Plastics, and formed to shape by a new process called *low-pressure laminating-molding*. Of particular interest to designers and engineers is the fact that it is a strong, one-piece, seamless structure, molded in inexpensive dies at pressures far below those usually required to fabricate plastics. This housing is one of a number of important war applications that forecast many new and important uses for plastics formerly considered impractical.

The antenna housing exemplifies the many advantages of low-pressure laminating-molding. Weight is reduced without sacrifice of mechanical strength and dimensional stability. Production is greatly accelerated, resulting in important economies. The molding of structures with compound curves is now practical. In this instance, an inflated rubber bag supplies the low, internal pressure required. As to service conditions, the housing withstands the air-blast, icing, constant changes in temperatures, and weathering to which today's fighting planes are subjected.

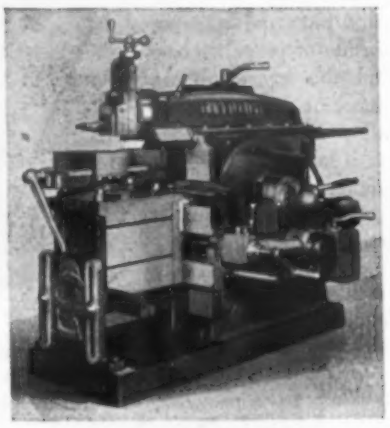
Write Department 16 for further information on the many advantages of this new low-pressure laminating technique to help you now in essential production, or to guide you in your planning for tomorrow.

BAKELITE CORPORATION, 30 E. 42 St., New York 17
Unit of Union Carbide and Carbon Corporation

Laminating Plastics

▲ Mention Item NED-1311 when writing ▲

20-INCH SHAPER



Especially suited to heavy and general tool room work, this Super Twenty 20-inch shaper is readily adaptable to wide variety of machine shop work. V-type ram has wide bearings on both bottom and sides. Column is ribbed for sturdiness. All gears in speed train are hardened and shaved. Main two-piece bull wheel gear and back gear train are helical. Multiple dry-disc clutch requires minimum of attention and adjustment.

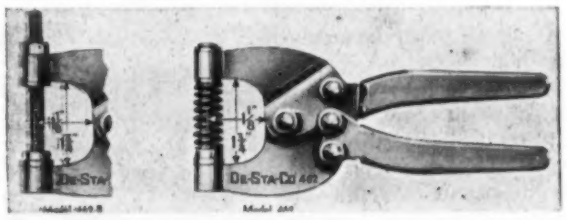
Feed range affords fine feed of 0.008 inch for finishing and hogging feed of 0.191 inch for heavy roughing cuts. Feed changes are accomplished by turning knob. Push button controlled high torque motor for power rapid traverse is standard equipment. In machining irregular surface it is not necessary to disengage feed to apply power rapid traverse. Electric limit switch in rail is safety feature, stopping both rapid traverse and main drive motors in case of feed overrun.

Standard equipment includes heavy duty vise with hardened steel inserts for jaws. Timken bearings are used throughout. Table is fully supported regardless of position. Made by **Queen City Machine Tool Co.**, 233 E. Second St., Cincinnati 2, O.

▲ Mention Item NED-1312 when writing ▲

SELF-ADJUSTING CLAMP

Operating on toggle principle, this model 462 small portable clamp automatically adjusts itself to varying thickness of work. Measuring 7¼ inches long, clamp has Pressure-matic feature



which gives it self-adjustment range of 0 to ⅜ inch. Ample throat dimensions permit its use in riveting, welding, reaming, drilling and other operations where manual adjustments of spindle gap would decrease production because of time element involved. Made by **Detroit Stamping Co.**, 360 Midland Ave., Detroit 3, Mich.

▲ Mention Item NED-1313 when writing ▲

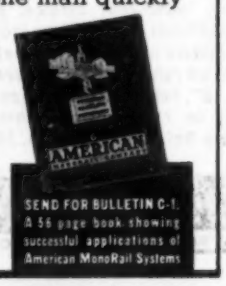
DO YOU KNOW?

Engines for the recently announced jet propulsion planes were developed by General Electric Co. in cooperation with British and American air forces. Bell Aircraft Co. carried out their assignment to perfect a plane suitable for operation with two of these engines. Several hundred successful flights have been made, many at high speeds and altitudes, all without a single mishap. Engines built by General Electric Co., Schenectady, N. Y.

▲ Mention Item NED-1314 when writing ▲

I-TON MONORAIL SYSTEM COSTS $186. SAVES $1560 EACH YEAR

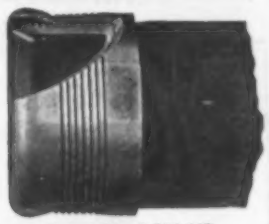
A simple system — 10 ft. of track with outside spur and hoist — helps one man quickly unload trucks to storage, saving $1560 each year. Let an American MonoRail Engineer show complete details.



THE AMERICAN MONORAIL CO.
13116 ATHENS AVE., CLEVELAND 7, OHIO

▲ Mention Item NED-1315 when writing ▲

WELD Pipe FASTER and BETTER with WEDGE Split CHILL RINGS



Patent No. 2,156,169

Unless you have used WEDGE Chill Rings with the Patented SPLIT Feature you can't appreciate how efficient they are. They enable you to weld pipe FASTER and do a BETTER job even with less skilled help. You get STRONGER joints. Write.

Split Feature Patented

PROTECT Valuable THREADS with WEDGE Protectors

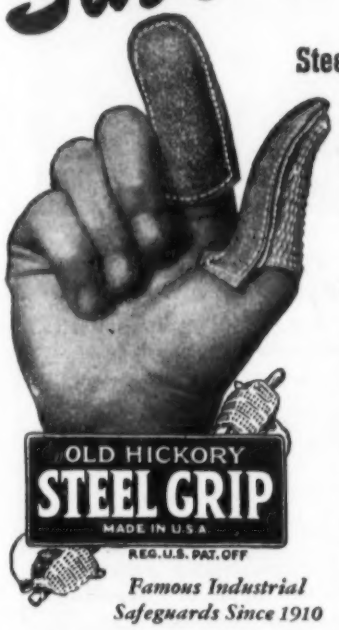
WEDGE Thread Protectors are used to protect threads on valuable parts from damage while in storage, handling or shipping. Why risk damaged threads when they can be so inexpensively protected with WEDGE Protectors. We make all types and designs. Write.

WEDGE PROTECTORS, INC.
9528 RICHMOND AVE. CLEVELAND 5, OHIO

Use WEDGE Chill Rings-Thread Protectors

▲ Mention Item NED-1316 when writing ▲

Save Fingers with Steel-Grip Finger Guards



Famous Industrial Safeguards Since 1910

● Hundreds of factories are saving time and injuries in war production by protecting workers with Steel-Grip Finger Guards. Used for handling rough or sharp articles, for buffing, grinding, sanding, polishing, punch press work and hundreds of other jobs. Protect fingers or thumb, front or back, from cuts, abrasions or blisters. Made of durable leather with elastic web back for snug, cool, comfortable fit. Easy on and off. One size fits all, men or women. Send 10c each for samples or trial order box of 50 at 8½c each, less 10%. Catalog of Steel-Grip Safety Apparel free on request.

INDUSTRIAL GLOVES CO.
634 GARFIELD BOULEVARD DANVILLE, ILLINOIS
(In Canada: Safety Supply Co., Toronto)

▲ Mention Item NED-1317 when writing ▲

PRESCRIPTION FITTED— —CUSTOM COMPOUNDED

WHEN you buy Radiac, you get the RIGHT wheel every-time! Prescription Fitting means that every Radiac Mounted Point or Wheel is specifically prescribed and custom compounded exactly to your needs for each job —then filed so that reorders can be accurately and quickly duplicated. All mounted points and wheels are 100% tested. Each is the product of pioneers in the industry. Look to Radiac for results!

RADIAC*

*T. M. Reg. U. S. Pat. Office
Copyright, 1944, A. P. de Sanno & Son, Inc.

A. P. DE SANNO & SON, INC., 446 Wheatland St., Phoenixville, Pa.
SINCE 1893
New York • Chicago • Pittsburgh • Cleveland • Detroit • Los Angeles

▲ Mention Item NED-1318 when writing ▲

IMMEDIATE SHIPMENT

STEEL BOXES

For Your Production Needs

STYLE 600

STACKING BOX

An ideal all-purpose shop box. Sturdy all-welded construction. Heavy skids act as positive stacking lock and re-inforce box at point of maximum wear.

No. 601 — 10" x 16" x 6" — 18 ga. — **$ .95 Ea.**

STYLE 500

STACKING BOX

Perfect for the handling of small parts. Open front makes contents easily accessible when boxes are stacked. Will stack with Style 600 boxes.

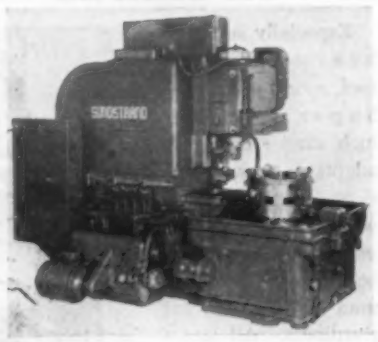
No. 501 — 10" x 16" x 6" — 18 ga. — **$1.15 Ea.**

Prices F.O.B. Factory, Phila.—Any Quantity!
Order Today—Write, Wire or Phone

AMERICAN METAL WORKS, Inc.
1503 GERMANTOWN AVENUE, PHILADELPHIA 22, PA.

Mention Item NED-1321 when writing

SPECIAL MILLING MACHINE



Designed to form mill radii and angle on inside of propeller barrel, this special milling machine is of heavy duty construction. Part is of tough steel and requires heavy cut on practically entire inside edge and bottom. Angular milling cutter with radius on bottom and using high speed steel blades is mounted directly on spindle which is driven by 10-horsepower motor. Drive to spindle is through V-belts with pick-off gears provided to furnish spindle speed changes in ratio of 3 to 1.

Column is of ribbed construction and, in addition to carrying vertical way surfaces for vertical travel of spindle head, it can be fed and traversed to and from workpiece. Workpiece is held in special fixture mounted on 22-inch diameter rotary table of solid spindle type with widely suspended bearings.

Automatic cycle provides three independent motions, cross feed to column, vertical feed to head and rotary feed to table, all timed and interlocked with starting and stopping of spindle and coolant flow. Hydraulic actuation of each moving member of machine is provided by fluid motor. Rate of table rotation can be varied infinitely from ½ to 10.1 inch per minute.

Similar machines can be designed for profile milling operations, rotary or contour and channel milling operations on connecting rods, housings and wheels. Made by **Sundstrand Machine Tool Co.**, 2574 Eleventh St., Rockford, Ill.

Mention Item NED-1324 when writing

SPOT 1 TO 6 LOADED CARS
IN A FEW SECONDS
with an
S-A CAR PULLER

A saving in time and labor may be realized with the use of an S-A Car Puller.

One man alone can spot up to 6 fully loaded cars on straight level track, eliminating the delay in waiting for switch engines.

The free end of the pulling rope is snubbed around the powerful capstan and the car puller does the rest.

Made in 2 sizes . . . No. 11 (illustrated) pulls up to three loaded cars . . . No. 12 pulls up to six loaded cars.

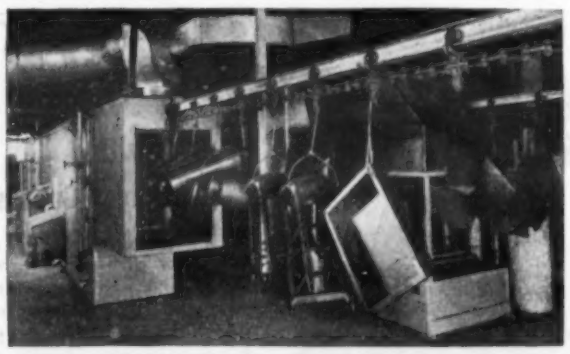
For full information, write for data book 1339.

STEPHEN S-ADAMSON MFG. CO.

Tellevel—Bin Level Controls · Car Loaders · SealMaster Ball Bearings · Car Pullers · Winches · Saco Speed Reducers

12 RIDGEWAY AVE., AURORA, ILL.

Mention Item NED-1327 when writing



Clean Metal Parts Quick and Slick With
RANSOHOFF CLEANING EQUIPMENT

Large or small, clean them all with this modern practically designed equipment. Years of experience on our part save you time and money.

Write us your problems. Let the RANSOHOFF ENGINEERS suggest the solution . . . today on war products . . . later on post-war items.

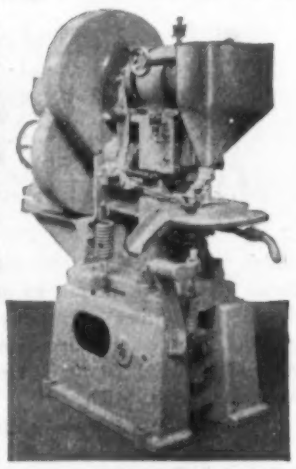
Illustrated is a monorail wash, rinse and dry machine for preparing work before painting. Work is carried through the machine suspended from hooks attached to chain conveyor.

N. RANSOHOFF, Inc. 1319 Township Ave. CINCINNATI, OHIO

Mention Item NED-1322 when writing

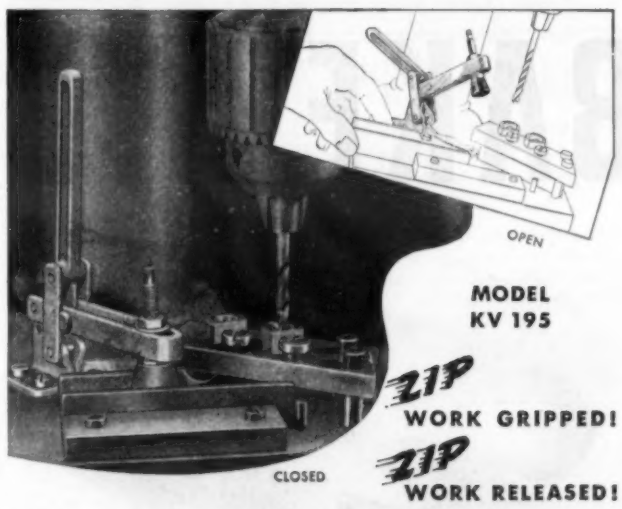
POWDER METALLURGY PRESS

Developed especially for powder metallurgy and dry pressing of ceramics, model T-4 high capacity press may be used to produce pieces up to 2½ inches in diameter with die-fill of 1⅝ inches at rates of 20 to 60 pieces per minute. Pressures of up to 20 tons can be applied from both top and bottom. Pressure adjustments may be made while machine is operating. This permits controlling of density of part within exact limits to assure uniform mechanical and electrical characteristics. For example, either desired porosity in oil-impregnated bearings or extreme density necessary in hard carbide tool bits is readily obtainable. (*Editor's Note: This description appeared Item NED-901, Feb. 1944 wrongly illustrated.*)



Features of this press include separate injection and compression levers; screw adjustment for compression; independent ejection cam; twin disc clutch and combined brake that starts and stops machine instantly, even under full compression load; variable speed drive to obtain maximum production with materials and parts of varying characteristics and size; and adjustable gibs to maintain close accuracy in punch and die alignment. Made by **F. J. Stokes Machine Co.**, 5964 Tabor Rd., Olney P. O., Philadelphia 20, Pa.

Mention Item NED-1325 when writing



MODEL KV 195

ZIP WORK GRIPPED!

ZIP WORK RELEASED!

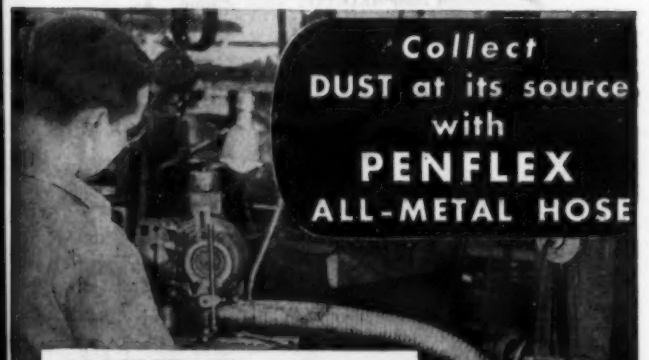
That's how fast Knu-Vise clamps operate.

Clamp is adjusted for required pressure when job is begun—never changes until job is finished. Operator simply flips lever to clamp work in position and flips lever back to release it.

Clamp shown above is of double action type. Movement of clamping bar is slower than that of handle, thereby developing a high ratio of pressure applied to work being held in position.

KNU-VISE INCORPORATED
2212 Eighth St., Detroit 16, Mich.
4328 San Fernando Rd., Glendale, Calif.

Mention Item NED-1328 when writing



Collect DUST at its source with PENFLEX ALL-METAL HOSE

PROTECT MEN, products and machines from abrasives, metal dust and other harmful material with PENFLEX General Utility Flexible All-Metal Hose.

PENFLEX bends easily, follows any desired path. Material flows through smooth, easy bends . . . no sharp turns . . . no clogging. Light in weight, PENFLEX adapts itself to movable parts, bilge ventilation, fume exhaust and conveying of dry granular materials.

For detailed information, send for Bulletin 60. Available up to 18 inches I. D., packed or unpacked.

Photo Courtesy of FIDELITY Machine Company

PENNSYLVANIA FLEXIBLE METALLIC TUBING CO.
7232 Powers Lane, Philadelphia, Pa.

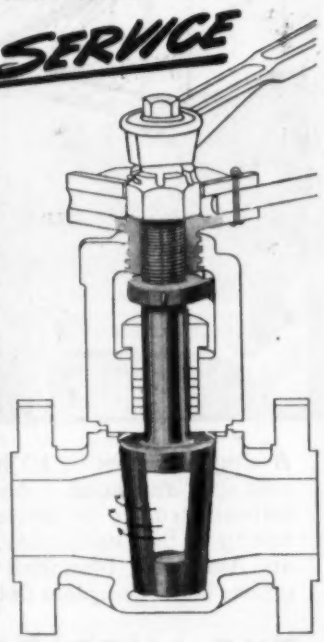
ESTABLISHED 1902

Mention Item NED-1323 when writing

Protected Operating Parts give

HOMESTEAD LEVER-SEALD VALVES

LONGER SERVICE



Neither moisture from without nor contents within can reach the mechanism that makes Homestead Lever-Seald Valves stick-proof and so easy to operate. Line fluids never come in contact with valve seating surfaces except when a small area of plug is momentarily exposed during opening or closing; and any fluid adhering to plug is instantly wiped off as valve moves from one position to the other. Because all operating parts are thus protected, both internally and externally, Homestead Lever-Seald Valves give longer, trouble-free, lower-cost service. Homestead Lever-Seald Valves are made in metals and alloys to meet your service requirements in sizes 1½" to 10", for pressure ranges from 150 to 1500 pounds. Write for Valve Reference Book No. 38.

HOMESTEAD VALVE MFG. CO.
P. O. BOX 84 · · · · CORAOPOLIS · · · PENNSYLVANIA

Mention Item NED-1326 when writing

Why AMERIFLEX
is the most popular
FLEXIBLE WOOD LINK MATTING

SAFETY
SANITATION
COMFORT
DELAYS FATIGUE
INCREASES PRODUCTION

Lies flat. Follows contour of the floor. Beveled edges reduce danger of tripping. Can be rolled or folded for easy handling and cleaning. Substantially constructed.

One inch thick. Comes in stock sizes. Also available in any special size or shape.

Write for prices and new catalog sheets describing various types of matting. Give details concerning problems, location, prevailing conditions and size of area to be covered.

RUBBER MATTING

for Switchboards that have Exposed Switches.

NOW AVAILABLE

without war contract number.

JOBBERS:

Write for details

AMERICAN MAT CORP.
1733 Adams Street
Toledo 2, Ohio

"America's Largest Matting Specialists"

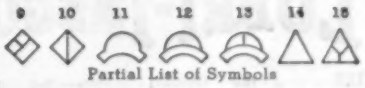
Mention Item NED-1329 when writing

FOR YOUR INSPECTORS

SAFETY Insert Style Inspector Hammer

- No Spalling
- No Mushrooming
- Symbol or Character Easily Removed or Changed

Made in any size and for any kind of inspection work



Partial List of Symbols

SAFETY Wedge Grip Symbol Stamps

- Over 500 Stock Symbols available in 6 different sizes.
- Widely used for secret coding and piece work identification.
- Safety Steel eliminates Spalling and Mushrooming.

Write for Prices and Circular

M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS
151 E. Carson St., Pittsburgh 19, Pa.

▲ Mention Item NED-1330 when writing ▲

4 times the production in '44

over '43. Maybe not, but whatever your goal, be sure that

PRODUCTIMETERS

are manning your machines, to give you exact count on this constantly growing output. There are over 100 standard styles and sizes to choose from . . . Stroke, Revolution, Lineal Measuring, Wire Measuring, Conveyor, Electric . . . designed for speed and accuracy . . . built to give service 24 hours a day . . . faithfully guarding production, checking losses, eliminating errors.

BULLETIN NO. 100

a concise, ready reference catalog of 100 standard models — sent at your request.

Our recommendations are backed by over 64 years' experience in the exclusive manufacture of counting and measuring machines.

DURANT MANUFACTURING CO.

1922 N. Buffum Street, Milwaukee, Wis. — 178A Eddy Street, Providence, R. I.

▲ Mention Item NED-1331 when writing ▲

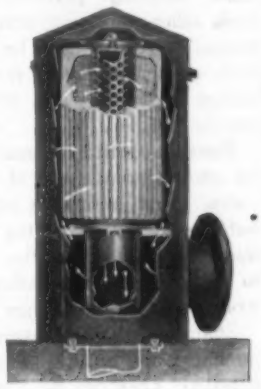
Bunting

BRONZE BEARINGS • BEARINGS • PRECISION BRONZE BARS

▲ Mention Item NED-1332 when writing ▲

INTAKE FILTER

Design of this Staynew intake filter is such that it permits ground level installation with high level intake. It is recommended for air compressor use because outdoors air is usually cooler and high level intake placement avoids concentrations of dust and dirt frequently encountered nearer to ground. It is also applicable for serving internal combustion engines. Because of ground level location, it is readily serviced in all kinds of weather. It may even be placed in engine room with air intake opening located outside at most suitable point.

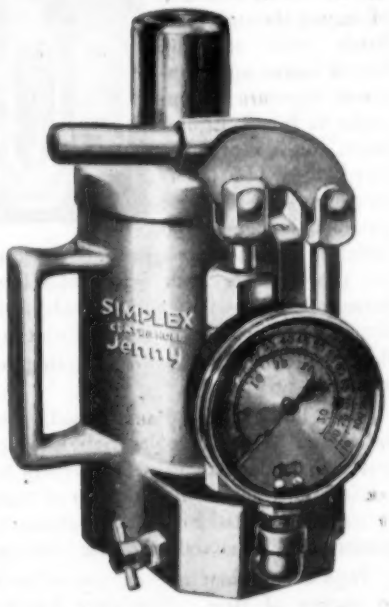


Features include radial fin construction and dry type filtering unit. Combination silencer and filter models are available. Servicing is extremely simple, as actual filter element can be lifted out through removeable panel, and either cleaned by brushing, by compressed air or by washing. Made by **Dollinger Corp.**, 11 Centre Park, Rochester, N. Y.

▲ Mention Item NED-1333 when writing ▲

HYDRAULIC PULLER

Reducing time required for production, maintenance and repair jobs, Simplex Jenny center hole hydraulic puller is adaptable for use in general industry, construction, ship building, mines, railroad shops and oil fields. It has been used for pulling in utility service pipe. Applications also include pulling bushings, cylinder liners, cutless bearings, pistons, wrist pins, valve seats, keys, wheels, sprockets, gears, boiler tubes and pipes. It may be used to pull structural members for welding or riveting.



This unit pulls, pushes or lifts, and can be rigged up as portable press. Being self-contained, it operates vertically or horizontally without need for heavy auxiliary equipment, and without side thrust or friction. It serves as its own back-up and is self-supporting because of center hole construction.

Five models are available, ranging in capacity from 30 to 100 tons. Light in weight in proportion to capacity, it is easily handled. Three models have single pumps and two have high and low speed pumps which may be operated separately, alternately or simultaneously. Alloy steel rods are recommended, as it will pull apart mild steel rods which will fit through center hole. Unit is built of heat-treated alloy steels to withstand heavy loads and service abuse. Made by **Templeton, Kenly & Co.**, 1020 S. Central Ave., Chicago 44, Ill.

▲ Mention Item NED-1334 when writing ▲

18 WAYS TO SAVE TIME & MONEY!

with the

Mead Industrial Burring Machine

For Wood—Metal—Plastic

New circular explains, illustrates 18 ways in which the Mead Industrial Burring Machine saves time and money—also contains special Grit Guide. Every industrial plant needs this "Jack-Of-All-Trades" machine. Your burring can be done in "free time"—install these machines by every machine tool which leaves burrs. Grinds, finishes both outside and inside cut-out openings. Immediate delivery in most cases. Write for the informative Money-Saving circular now.

MEAD SPECIALTIES COMPANY

15 SO. MARKET ST., DEPT. 34-N, CHICAGO 6, ILL.

▲ Mention Item NED-1335 when writing ▲

Use "PERMAFLEX" Resurface and Patch INDUSTRIAL FLOORS

Hard Mastic

Heavy Duty • Dustproof • Waterproof • Fire resistant • Restful • Quiet • Slipproof • Sanitary

Install any thickness required right over the old surface. Bonds perfectly—never comes loose. 3000 lbs. pressure per sq. in., will not rut. Outwears any other known flooring.

Install "Permaflex" right over your old or new floors, walks or drives . . . interior or exterior . . . on Friday night and Saturday. Ready for use Monday. No chipping. No dust. No production delays. No need to move machinery . . . finish right up to it. If desired, our Contract Department will install "Permaflex" floors for you, up to 30,000 square feet per day.

More than 400 leading industrial plants use "Permaflex" . . . including U. S. Steel, Bethlehem, Republic, General Motors, A. O. Smith, Union Carbide, Remington Arms, Anaconda, Western Electric, Westinghouse, Bush Terminal, leading Railroads . . . and never a failure in more than 1000 installations.

Industrial Plants—write for details; 100 sq. ft. trial offer . . . and prove that Permaflex makes the most durable, lowest cost, most economical industrial flooring ever invented.

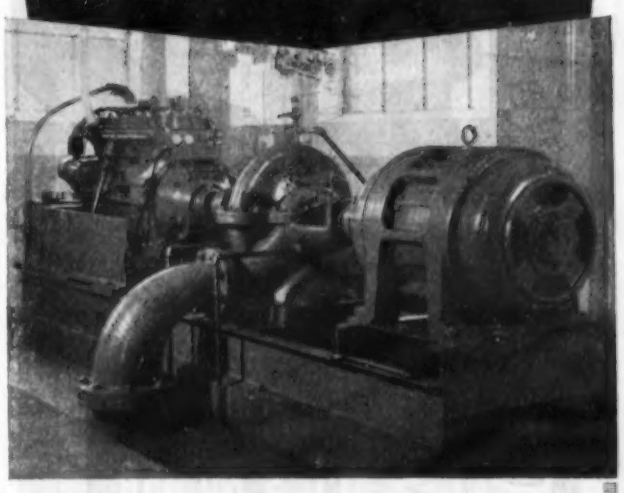
INSTALL COMPLETE 12½c per square foot

PERMAFLEX PRODUCTS COMPANY

1848 North Front Street, Philadelphia, Pa.

▲ Mention Item NED-1336 when writing ▲

Diesel Stand-by Proves Itself Against Water Power!



This Fairbanks-Morse Diesel-driven pumping unit was originally installed as a stand-by. Actual operations soon proved it able to compete economically with water-powered pumps.

Now it's on the regular shift in the Franklin, New Hampshire pumping station. *That,* in this state, the nation's waterpower stronghold, is a significant tribute to Fairbanks-Morse operating economy.

Fairbanks-Morse Pumping Units Give You All of These Advantages

- Sound and Practical Design
- Rugged and Simple Construction
- Inexpensive Installation
- Economical Operation
- Low Maintenance Cost
- Reliable and Efficient Performance
- Longer Life
- Adaptability to All Conditions
- Higher Suction Lift
- Steady Flow at Uniform Pressure
- Reliable Engineering Service
- Standardized Parts Replacement
- Quality Control
- Protective Guarantee
- Purchase of Complete Unit from One Responsible Manufacturer

If you have pumping problems now, or if you are planning ahead . . . our engineers can help you as they are helping so many others. There is no obligation. Write Fairbanks, Morse & Company, 270 Fairbanks-Morse Building, Chicago 5, Illinois.

FAIRBANKS-MORSE

DIESEL ENGINES, PUMPS, MOTORS, GENERATORS, WATER SYSTEMS, SCALES, STOKERS, FARM EQUIPMENT, RAILROAD EQUIPMENT

Pumps

▲ Mention Item NED-1337 when writing ▲

LOOKING FOR SAFETY EQUIPMENT? WRITE PULMOSAN THEY'VE GOT EVERYTHING!

A "new" Pulmosan has grown out of the national emergency—offering an even wider choice of safety equipment, broader scope of service, greatly increased manufacturing facilities.

If you need safety equipment of *any* type—our ample stocks permit prompt delivery. If you need advice on any safety problems, our engineers are glad to give authoritative suggestions. If you need assistance in the development of any safety product—our research laboratory is at your service. Send for our complete catalog. Pulmosan Safety Equipment Corporation, Dept. NED, 176 Johnson Street, Brooklyn 1, N. Y.

Respirators, Hoods, Helmets, Face and Eyeshields, Goggles, First Aid, Acid and Chemical Handling, Protective Clothing, Welding, etc.

Pulmosan — EVERYTHING FOR INDUSTRIAL SAFETY

PULMOSAN STOPS Accidents

▲ Mention Item NED-1338 when writing ▲

● Spin it up, spin it down—and this modern speedy No. 65R is ready to thread 1", 1¼", 1½" or 2" pipe—clean accurate threads cut with high-speed steel dies that stay in the threader, no bother with extra sets of dies for each size. Mistake-proof workholder sets to size instantly, only one screw to tighten. It's a rugged steel-and-malleable tool you enjoy using. For easier quicker threading, better threads and lower tool cost, ask your Supply House for the efficient No. 65R.

No. 65R with cam type workholder.

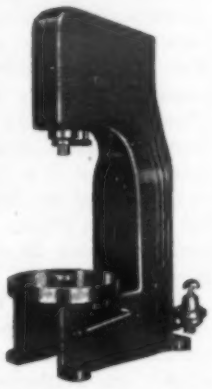
THE RIDGE TOOL COMPANY · ELYRIA, OHIO

RIGID ★ PIPE TOOLS ★

▲ Mention Item NED-1339 when writing ▲

AIR-HYDRAULIC PRESS

Powered by normal compressed air supply line pressure which is multiplied by two hydraulic cylinders at ratio of 50 to 1, model 900 air-hydraulic press affords controlled pressure of from 1 to 5000 pounds. Many operations normally performed on punch, kick, arbor, stamping, trimming or other manual presses can be accomplished without fatigue. Work ranging up to 12 inches in diameter and 11½ inches thick can be handled.



Positive control of pressure is possible by simple adjustment of air regulating valve. Even pressure is applied throughout stroke. Quick acting hand or foot operated four-way valve may be used to minimize physical effort and enable women operators to run presses.

Stamping, riveting, assembly, forming, punching and cutting operations may be handled. Dies can be furnished for special operations. Made by Beyer Machine Co., Air-Hydraulics Div., Jackson, Mich.

▲ Mention Item NED-1340 when writing ▲

TANK LIQUID LEVEL GAGE

Level of liquid in all types of tanks is readily determined with this multiple duty, accurate Gaugit hand tank gage. Its use avoids necessity of gaging through open hatch with resulting loss of vapors and eliminates exposure of operator to fumes. Equipment consists of sampler-bob with thermometer, fingered tape guard and gaging tape which is reeled past sight glass on top of unit. Access doors are provided for both upper and lower chambers. Gaging valve, operated with knurled knob, isolates upper from lower chamber when closed. Base of unit has standard 125-pound flange which is drilled for mounting on standard 4-inch gate valve.

With both access doors closed, gager opens 4-inch gate valve and lowers sampler bob into tank, tape guard being retained inside gate valve to prevent valve being closed and cutting tape. When that portion of tape where level of liquid in tank is expected to be found comes into view in sight glass, gaging valve is closed to prevent escape of tank vapors.

Tape access door is then opened and gaging paste applied to section of tape. After door has been closed again and gaging valve reopened, tape is reeled out slowly until sampler-bob contacts bottom of tank. This opens upper valve in sampler-bob so as to take sample of contents as tape is reeled in. Gager stops reeling at point where gaging paste has been cut, takes reading and then wipes tape clean of paste. After access door has been closed and gaging valve opened again, sampler-bob is reeled in reclaiming tape guard from gate valve and until bob hits safety bumper in sampler housing. Gate valve is then closed, door to sampler chamber opened, temperature recorded and contents of sampler-bob drained into container or returned to tank. Made by The Johnston & Jennings Co., Oceco Div., 877 Addison Rd., Cleveland 14, O.

▲ Mention Item NED-1341 when writing ▲

BILL GLOVER ASKED US AN INTERESTING QUESTION:

"You know," Bill said, "everybody I talk to agrees with me that VICTOR is the finest welding and cutting apparatus on the market."

"But here's what I'm wondering about . . ."

"Your equipment is so beautifully made, looks so impressive and modern. Do you suppose some people think it's too expensive?"

WELL, BILL, HERE'S OUR ANSWER:

"When you build something extremely well, it looks it. While our prices might be a little higher, thousands of VICTOR welding and cutting apparatus owners have proved to themselves that it's really cheaper in the long run to buy quality—saves on operating and maintenance costs."

ARMY E NAVY

See for yourself what we're talking about. Write today for our descriptive bulletin Form No. 20.

"It Costs Less To Own And Operate Victor"

VICTOR EQUIPMENT COMPANY

844-54 FOLSOM STREET, SAN FRANCISCO (7)

▲ Mention Item NED-1342 when writing ▲

HEAD AND SHOULDERS *above* ORDINARY OILS!

LUBRI-TASGON

PENETRATES . . . the tightest joints—the spots not reached by other oils.

SPREADS FAST . . over chafing surfaces—completely lubricates every place that needs it.

PROTECTS . . . . the danger spots—keeps bearings from running hot.

DISSOLVES . . . . rust, carbon, grit, and gummy oil.

TRY IT! Find out how much time and money it can save you. Order a sample can from your mill supply house or direct from

SAMUEL CABOT, INC.

1414 OLIVER BLDG. • BOSTON, MASS.

▲ Mention Item NED-1343 when writing ▲

In use by WESTINGHOUSE to clean small Ceramic Pistons and Cylinders — Meticulously!

L&R PRECISION CLEANING EQUIPMENT

CLEAN: Electronic Tubes, Instruments, Meters, Gauges, Bearings, Jewels, Crystals, Screw Machine Products, Motor Assemblies, etc.

Write for complete, descriptive catalog material.

L&R MANUFACTURING COMPANY

577 ELM STREET • ARLINGTON, NEW JERSEY

CLEAN • RINSE • POLISH • DRY with L&R in one complete self-contained unit

▲ Mention Item NED-1344 when writing ▲

HELP FOR MECHANICS' BUSY FINGERS

KNURLED "UNBRAKO" SOCKET CAP SCREWS

UNBRAKO

Reg. U. S. Pat. Off.

Fingers gear right to the *knurling*. This prevents slipping and lost motion and naturally saves time—speeds assembly. Knurling also permits locking of "Unbrako" Socket Caps—we'll gladly tell you how. Sizes: No. 4 to 1½" diameter. Send for the "Unbrako" catalog today.

Knurling of Socket Screws originated with "Unbrako" years ago.

OVER 40 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. BOX 581

Branches—BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

▲ Mention Item NED-1345 when writing ▲

DUSTKOPS **STOP DUST** for ALL Abrasive Operations

Entirely Self-contained. Motor, fan, cyclone separator and filter. Fast installation. Flexible metal hose permits installation complete in minutes.

Compact and Portable. Even the biggest DUSTKOPS will usually fit in the existing space behind or beside the grinder.

Send now for complete information. To save time, describe the source of the dust when you write.

AGET-DETROIT CO.
603 First National Bldg., Ann Arbor, Mich.
Detroit Office: CAdillac 3090—Zone 26

MODEL 950 has a cyclone separator.

"READY TO GO" this model is for medium duty work of all kinds.

MODEL 600 has a spun glass filter.

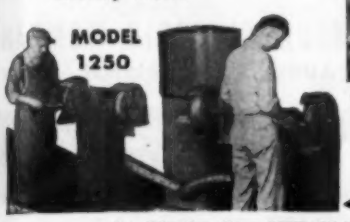
Ideal for light duty production surface grinding.

MODEL 600 Spun Glass Filter

For smallest grinders, laboratory work.

MODEL 1250 has a cyclone separator.

Handles all the dust from this armor grinding job easily.



MODEL 1250

Four wheels exhaust into a single Model 1250 that gets all the dust.

▲ Mention Item NED-1348 when writing ▲

PROFIT BY "ABRASIVE" SUPERIORITY

For example, Abrasive Company Snagging Wheels grind *more*, grind *longer*—and for Less! Grinding Wheel COST is determined by Grinding Wheel PERFORMANCE! Write on your letterhead for full details on "Abrasive" Snagging Wheels and Abrasive Company's patented Red Streak Flanges. Please request Form ESA-62.

COMMANDING QUALITY

TRADE ABRASIVE MARK REGISTERED

OUTSTANDING RESULTS

ABRASIVE COMPANY
Tacony and Fraley Sts., Philadelphia 37, Pa.
DIVISION OF SIMONDS SAW AND STEEL CO.

▲ Mention Item NED-1349 when writing ▲

ADDRESSES STAY ON when they're

MARSH STENCIL MARKED

The U. S. Navy uses thousands of stencil cutting machines on ships and shore stations for stencil marking everything from a sailor's clothing to supplies and ammunition.

Your shipments should be stenciled for fast, safe delivery. Cut your stencils on a MARSH. No experience required... saves up to $50 monthly in shipping room time. Also Fountain Brushes, Inks, Stencil Board. Write for booklet and prices. MARSH

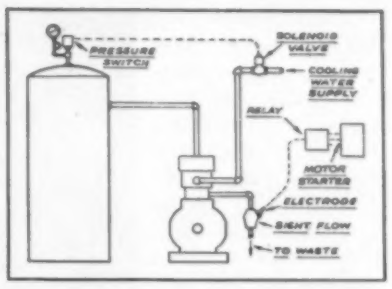
MARSH STENCIL MACHINE CO., 23 Marsh Bldg., Belleville, Ill., U.S.A.

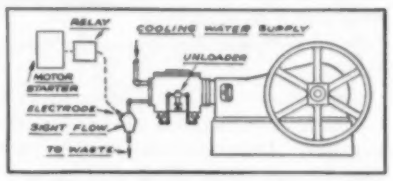
PROMPT DELIVERY IN THREE SIZES TO MEET GOVT. SPEC... ½", ¾", 1"

MARSH

▲ Mention Item NED-1350 when writing ▲

COMPRESSOR CONTROL





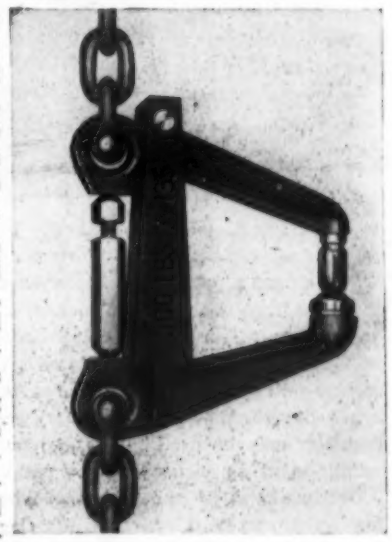
Preventing overheating and waste of water, this compressor control permits compressor to operate only when water is actually flowing. It thus guards against failure of water supply from any cause and consequently permits use of automatic water cut-off valves.

Control consists of sight flow fitting, mounted in water discharge pipe of compressor, which serves as holder for metal electrode. When pressure in receiver falls below predetermined level, pressure switch on receiver opens solenoid controlled valve to admit cooling water to compressor. Compressor is not started until water flows through it and into sight flow, completing circuit with electrode. This arrangement is designated type M. By supplying cooling water only while compressor is operating, water waste is prevented.

Control is also available as type U for use on unloading compressors. It insures that water is flowing before compressor starts and stops compressor or sounds alarm if water supply fails. Device is completely automatic and is claimed to be as dependable as the flow of electricity. It can be used on compressors of all sizes and can be adapted to practically all operating conditions. Made by **Johnson Corp.**, Three Rivers, Mich.

▲ Mention Item NED-1351 when writing ▲

HEAVY DUTY RELEASE LINK



Designed for use with heavy loads where positive, self-releasing action may be required, this Quartzoid bulb type release link has load capacity of 500 pounds. It is essentially a fire protection device used in gas and oil field, tank farms, refineries and chemical plants where self-releasing action of valves would check running fires. It is used on storage tanks for automatic release of "floating roofs" and on board ship for automatic jettisoning of inflammable deck cargo. Advantages of link with its Quartzoid bulb include: high load capacity, wide range of thermal ratings, extreme sensitivity and resistance to corrosion. Addition of this high capacity link completes line of release links having load capacities of 3, 20, 150 and 500 pounds. Made by **Grinnell Co.**, 251 Exchange St., Providence 1, R. I.

▲ Mention Item NED-1352 when writing ▲

For Maintenance Wiring .. New Wiring

FLAMENOL*
BUILDING WIRE
(Type SN — Small Diameter)

Flamenol Building Wire is easy to install and can be depended upon to give long, satisfactory service. It is insulated with a thermo-plastic compound... *is small in diameter*... has a smooth finish. Its insulation is superaging, high in dielectric and mechanical strength, flame retarding and resistant to oils, moisture, acids, etc. Flamenol Building Wire is available in sizes 14 to 1,000,000 CM. You can use it for branch circuits, feeders or special wiring.

*Reg. U.S. Pat. Off.

FREE. Write for your copy of this table which helps in figuring wire copper weights for CMP applications.

For further information see the nearest G-E Merchandise Distributor or write to Section W342-48 Appliance and Merchandise Department, Bridgeport, Conn., for a folder on Flamenol Wire and the copper weights table.

BUY WAR BONDS

GENERAL ELECTRIC

▲ Mention Item NED-1353 when writing ▲

SPLIT-SECOND CONTACT*

* just another way of saying AMPLICALL

Instant contacts are the "life pulsations" of modern business ... since getting to the right man *at the right moment* may make a sizable difference in plant efficiency. Providing for these *instant contacts* that *erase distance* is the reason why *AMPLICALL* Paging and Two-Way Communications Systems are in constant use by thousands of America's small, medium and large industrial plants. There is a RAULAND Sound System of a design and capacity to meet perfectly your every need. Let us give you all details.

HERE ARE SOME OF *AMPLICALL'S* MULTIPLE USES:
Locates Instantly · Saves Precious Time · Saves Countless Steps · Relieves Switchboard Congestions · Provides Split-Second Safety Protection · Increases Production Through Musical Programs

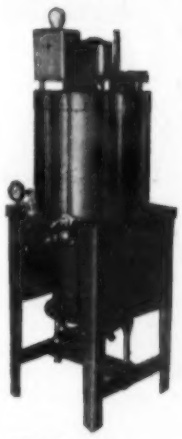
Electroneering is our business

BACK THE ATTACK — Rauland — BUY WAR BONDS & STAMPS

RADIO... SOUND... COMMUNICATIONS
The Rauland Corporation... Chicago, Illinois

▲ Mention Item NED-1354 when writing ▲

YM SAVES OILS
Pays for itself in 3 to 12 months!



GH Model

● Take this "tip" from leading aircraft engine builders... airplane builders... large and small industrial firms... they use YM RECLAIMERS to salvage their lubricating and hydraulic oils. YM refined oil meets the same specifications as the new parent oil—and the oil can be used and reclaimed over and over, returning each time to oil suitable for reuse. Cost per gallon of oil treated is 5c in most plants and never over 10c. Send for a proposal on equipment suitable for reclaiming your oils. Advise quantities of oil available each week.

YOUNGSTOWN MILLER COMPANY
SANDUSKY, OHIO

YM OIL REFINERS For Lubricating and Hydraulic Oils

▲ Mention Item NED-1355 when writing ▲

KICK THAT "POP-OFF" MECHLIN OUT!

"Mechlins" are trouble makers for men who handle wrenches. Here is one of 'em — "POP-OFF" — who's in there pitching to make sockets and attachments fall off ordinary wrench handles — damaging machinery and injuring workmen.

POP-OFF'S ENEMY IS BLACKHAWK'S LOCK-ON

Blackhawk Socket Wrenches are unlike ordinary wrenches. They have a patented, built-in device called "Lock-On" that clicks sockets, handles and attachments into rigid combinations. No set-screw devices or friction grip. To disengage, simply press a small built-in button with your thumb, and pull.

GET THESE 2 NEW BOOKS

Wartime Wrench Catalog and "MEET THE MECHLINS"—Two new books just published that give you helpful wrench data you've never before had. Send coupon now!

BLACKHAWK

BLACKHAWK MFG. CO., Dept. W1434, Milwaukee 1, Wis.
Rush your free booklet "MEET THE MECHLINS" and new wartime Wrench Catalog.

Name.....
Company.....
Address.....

▲ Mention Item NED-1356 when writing ▲

POSITION YOUR WORK

REDUCE WELDING COSTS

P&H WELDING POSITIONERS

Model WP-2
2500 lbs. Capacity

- New and improved
- Lower priced
- More versatile
- Hydraulic power tilting
- Positive table locking device
- Telescopic elevation
- Manual turning to suit any welding speed
- Large table area with handy slots
- Portable or column-in-floor mounting
- Hand wheel or power turning available

Why postpone the savings in time, effort, and money this new positioner will give you? Write today for Bulletin P-2.

General Offices: 4555 West National Avenue, Milwaukee 14, Wis.

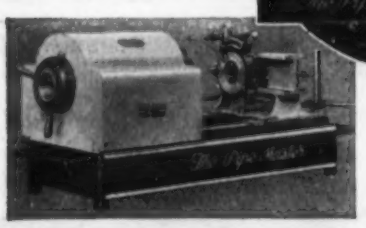
HARNISCHFEGER CORPORATION
ARC WELDERS • EXCAVATORS • ELECTRIC CRANES • P&H • MOTORS • HOISTS • WELDING ELECTRODES

Canadian Distribution: The Canadian-Fairbanks Morse Co., Ltd.

▲ Mention Item NED-1357 when writing ▲

Speed Up Threading with an Oster **"PIPE MASTER"**

This complete, portable threading machine threads pipe and bolts from 4 to 7 times faster than hand tools and with no effort on part of operator. Range of machine for pipe is ¼" to 2"; extra range ⅛" pipe; range with drive shaft is 2½" to 6" pipe; Bolt range: ⅝" to 1¼" N. C. and ⅝" to 1½" N. F.



The Oster No. 502 "PIPE MASTER" is equipped with either Quick-Opening, Adjustable Die-Heads and Dies or with Solid Die Adaptor, as desired. This machine threads nipples as short as 3½" in the 2" size on both ends without using a nipple chuck; pipe and studs as short as 2½" can be held and threaded on one end. (Other sizes in proportion.)

"PIPE MASTER" is regularly furnished for bench use but can be supplied with pipe leg stand or with all-steel wheel stand at extra cost.

Ask for Catalog No. 24-A.

OSTER **THE OSTER MFG. COMPANY**
2066 E. 61st St., Cleveland, Ohio, U. S. A.

THREADING MACHINES • TURRET LATHES

▲ Mention Item NED-1358 when writing ▲

EC&M OIL-IMMERSED OR AIR-BREAK PUSH BUTTON

Type EO for Class 1, Group D Hazardous Locations

★ *The Ideal Push-Button for Lighting Circuits or Control Stations*

APPROVED and listed by the Underwriters' Laboratories for Class 1, Group D Hazardous Locations. Sturdy contacts and operating levers. The tank screws on—may be quickly removed for wiring or inspection. Has provision for padlock to lock in open position.

Ask for Bulletin 1105-B giving complete description, ratings, etc.

THE ELECTRIC CONTROLLER & MFG. CO.
CLEVELAND, OHIO

BRAKES MAGNETS LIMIT-STOPS MOTOR-CONTROL

▲ Mention Item NED-1359 when writing ▲

ELECTRIC WELDERS

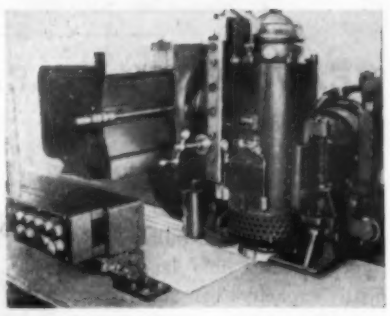
Improvements in type WD-30 series direct current, single operator arc welding machines include two new control dials and redesigned driving motor. Control dials permit welding current to be preset without aid of volt-ammeter and driving motor is designed to give exceptional resistance to weather when machine is operated outdoors.

One control dial is calibrated in terms of electrode size. Operator sets this dial to correspond to size of electrode being used. Other dial indicates range of welding current available for use under these conditions. Welding current is preset by moving pointer to whatever amperage is required. Clear, easily read calibrations facilitate quick, accurate operation of both dials.

Driving motor is equipped with heavier insulation than former motor, and has special weather-protective features. Enlarged air intake openings for ventilating air keep air velocity low enough to prevent rain and snow from being drawn in. Large baffle back of openings prevents water from splashing into motor. Insulation is highly resistant to deterioration from salt spray. Made by **General Electric Co.**, Schenectady, N. Y.

▲ Mention Item NED-1360 when writing ▲

PLYWOOD BEVEL MILLER



Large size plywood panels and veneer sheets which are beyond capacity of standard presses or other equipment are made up by scarf jointing of standard size sheets. This No. W-330 bevel miller is designed to cut, at high speeds, bevels for such scarf jointing operations. Bevels produced are wide and cut to precision flatness. Machine is large enough to hold any standard plywood or veneer sheet. Stock may be of any thickness from 1/16 to 2¼ inches.

Carriage which houses cutter motors travels over bed to mill bevel of any length required. Vertical cutter heads tilt so that mill cutters will machine in any plane from horizontal to 15 degrees off-vertical. Rotary cutters up to 7 inches in diameter may be used. With two motors, bevels up to scant minimum of 14 inches may be cut in single pass.

Sectionalized 40-inch wide bed is made up of as many 15-foot lengths as work requires. Carriage mounts two 10-horsepower, 3600 revolution per minute motors, as well as all push buttons which control machine's operation. Motors raise and lower to work through handwheel and screw action. Carriage feeds of 3 to 9 feet per minute may be selected while cutting. Rapid return feed of 18 feet per minute minimizes non-productive time. Made by **Onsrud Machine Works, Inc.**, 3956 Palmer St., Chicago 47, Ill.

▲ Mention Item NED-1361 when writing ▲

THIS CRACK APPEARED HOPELESS until FIXED with SMOOTH-ON

Buy the genuine SMOOTH-ON in 7-oz., 1-lb., or larger containers from your supply house, or if necessary from us.

This crack, between the air starting valve port and the cylinder head water jacket of a Diesel engine, was sealed by fitting a pipe sleeve into the port, and filling the crack with SMOOTH-ON No. 1, also applying a thin coat of SMOOTH-ON No. 3 to cement the sleeve in place.

Whenever a crack, break, leak or a loose part develops in any apparatus or pipe line, think first of SMOOTH-ON. This many-purpose iron repair cement will frequently enable you to make repairs quicker and at less cost than by any other method.

FREE 40-Page Handbook

explains how to make 170 repairs on equipment and pipe lines. Its practical suggestions are based on the experience of thousands of engineers. Be sure to write for your copy today.

Smooth-On Mfg. Co., Dept. 10
570 Communipaw Avenue, Jersey City 4, N. J.

Do it with **SMOOTH-ON**

▲ Mention Item NED-1362 when writing ▲

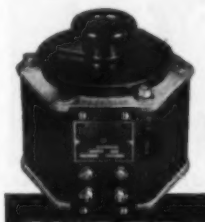
YOU'RE ON THE SPOT

WHEN A TUBE BURNS OUT IN YOUR BLUE PRINTING MACHINE

Costly delays or expensive replacements due to burned out tubes are eliminated by the installation of POWERSTATS

Exacting control of input voltage on your blueprinting machines can be maitained by manually operated POWERSTAT variable voltage transformers, or by SECO automatic voltage regulators.

Longer life of tubes is assured; more efficient operation without delays or costly production shut-downs can be gained. Complete information promptly sent without obligation — ask for Bulletin 149 DN and 163 DN.



SUPERIOR ELECTRIC COMPANY
360 LAUREL ST. • BRISTOL, CONN.

SUPERIOR *Electric Company*

▲ Mention Item NED-1363 when writing ▲

TIME SAVER

FOR QUICK CHANGE MARKING

- Fastest, simplest way to number parts.
- Easy—turn screw to change numbers.
- Made of best quality tool steel.
- Guaranteed for years of service.
- PROMPT DELIVERIES

SOSSNER
161 Grand St. New York 13, N. Y.

▲ Mention Item NED-1364 when writing ▲

MAN-HOURS SLASHED 30% with ATLANTIC GRINDING WHEELS

In grinding hard welds, use of Atlantic's Type AK Wheels **reduced labor by 30%** for a heavy machinery builder because our special wheels are

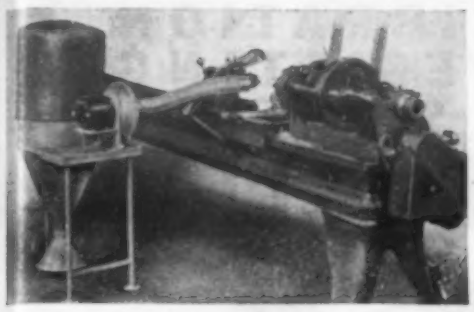
ENGINEERED FOR MAXIMUM PRODUCTION

See how your output, too, can be upped by Type AK Wheels, **engineered** to be safe and cool at higher grinding speeds! Write today for the free technical service of an Atlantic engineer. Atlantic Abrasive Corp., 541 Pearl St., South Braintree, Mass.

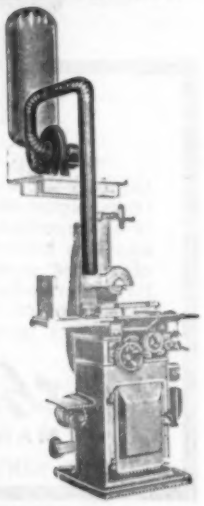
Atlantic PATENTED RESINOID BONDED *GRINDING WHEELS*

▲ Mention Item NED-1365 when writing ▲

GRINDING on your LATHE with LEIMAN BROS. New Unit Dust Collector



stops dust breathing which causes lung diseases—

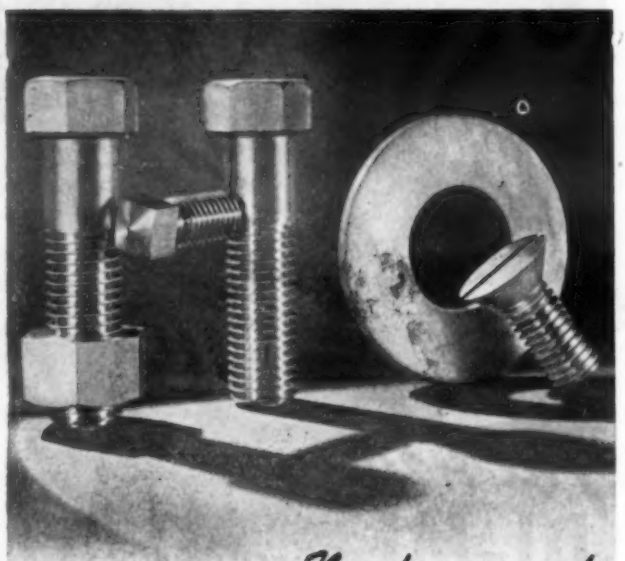


USED ON
Surface Grinders
Lathes
Saw Machines
Belt Sanders
Wheel Sanders
Double End Grinders
Sand Blasts and
other Dust Creating Devices

SIZE FOR ONE 6" WHEEL UP TO TWO 24" WHEELS

LEIMAN BROS.
167 CHRISTIE ST. NEWARK, N. J.

▲ Mention Item NED-1366 when writing ▲



Non-ferrous and Stainless FASTENING

Headquarters

HEADQUARTERS is "a chief place of business." So . . . when you need non-ferrous and stainless fastenings, come to Harpers . . . the organization which specializes on the manufacture of bolts, nuts, screws, washers, rivets and specials made of Brass, Bronze, Copper, Everdur, Monel and Stainless . . . an organization not concerned with common steel fastenings.

To serve fastening users, Harper stocks over 4280 different items . . . employs a large staff of engineers and field service men . . . and offers a vast fund of practical non-ferrous and stainless fastening "Know how." Sample this "Know how" by writing (on your letterhead) for a four-color, 84 page catalog.

BRASS
BRONZE
COPPER
EVERDUR
MONEL
STAINLESS

THE H. M. HARPER COMPANY
2628 Fletcher Street, Chicago 18, Ill.
BRANCH OFFICES:
New York City • Philadelphia • Los Angeles
Milwaukee • Cincinnati • Houston
Representatives in Principal Cities

HARPER
EVERLASTING FASTENINGS

▲ Mention Item NED-1367 when writing ▲

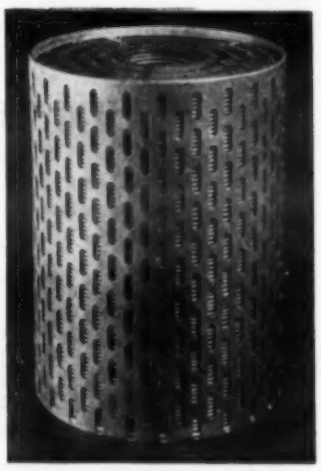
AIRCRAFT RIVETING HAMMERS

Affording power, perfect control, smooth operation and ease of handling, this line of slow hitting aircraft riveting hammers features two-finger trigger, metered air throttle valve, improved offset handle, balance and compactness. Arrangement of valve mechanism and porting reduces jarring and vibration to minimum and affords power in excess of rating.

Tool is available in two sizes with either conventional or offset handle. Model HA-19 has nominal capacity of ⅛ to 5/32-inch rivets. It weighs 2 pounds 5 ounces. Model HA-39 has nominal capacity of ¼-inch rivets and weighs 3 pounds. Both tools include as standard equipment conventional beehive retainer and adjustable air regulator. Nozzle takes standard Parker taper shank rivet sets 1⅝ inches long and 0.401 inch in diameter. Made by **Forss Pneumatic Tool Co.**, 1827 Broadway, Rockford, Ill.

▲ Mention Item NED-1368 when writing ▲

HYDRAULIC FILTER



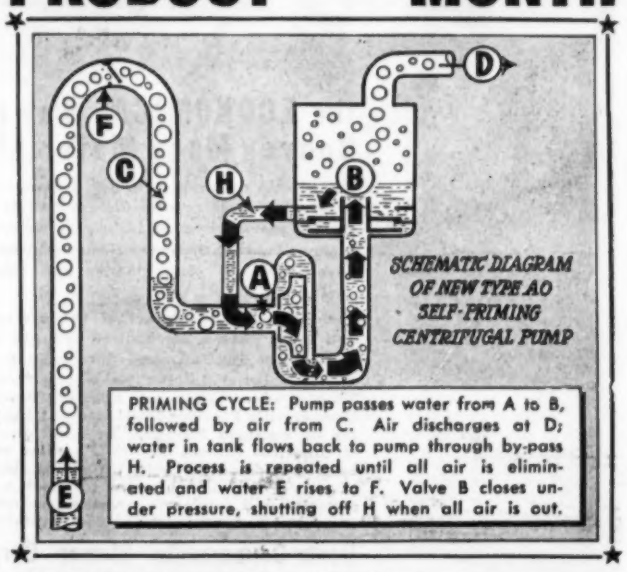
Filtering particles of 5 microns and larger, Micronic aircraft hydraulic filter combines high capacity with fineness of filtration, light weight, low cost and design simplicity. It operates from minus 65 to plus 165 degrees Fahr. Filtering cartridge itself expands and contracts with varying temperatures encountered.

Model illustrated measures 6 x 8½ inches, weighs 2 pounds and has 3800 square inches of filtering area. Rated output is 1800 gallons per hour at 100 degrees Fahr. with pressure drop of only 16 ounces when filtering AN-VV-O-366a hydraulic fluid. Inlet opening is 1½ inches in diameter. Filtering flow may be arranged for either direction.

Automatic pressure relief is incorporated to bypass full flow of liquid at any predetermined pressure setting, should line surges peak beyond safe points. Filter operates in any position, however, generally accepted aircraft practice locates 1½ inch opening at bottom. Dural alloy is used for metal parts of filter, although tooling is so arranged to permit use of other alloys, such as stainless steels for food industry and other individualized applications. Filter is available also in 2 and 4-inch sizes with capacities of 450 and 900 gallons per hour respectively. Made by **Adel Precision Products Corp.**, Van Owen & Cleon Sts., Burbank, Calif.

▲ Mention Item NED-1369 when writing ▲

PRODUCT OF THE MONTH



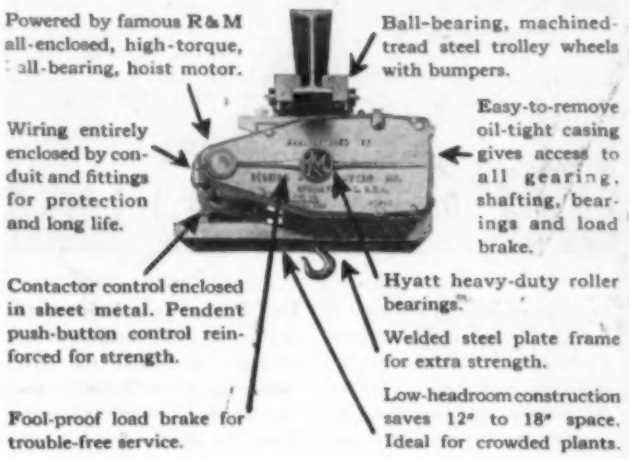
MILWAUKEE, WIS.—Allis-Chalmers announces a new automatic self-priming centrifugal pump, Type AO, which insures high efficiency through new-type spring valve. The AO is especially adaptable to uses where installation speed is important. Available for high priority jobs.

ALLIS-CHALMERS·MILWAUKEE·WIS.
A-1674

▲ Mention Item NED-1370 when writing ▲

9 Ways better . . . New!

R & M STEEL Hoists

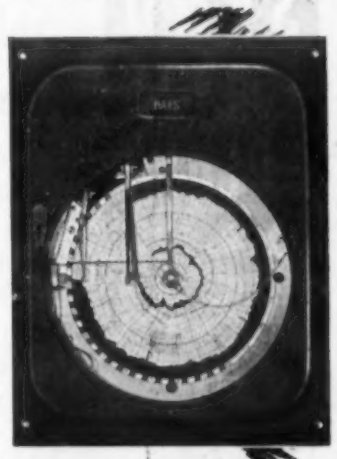


Write today for Folders No. 800 and 801-NED giving complete facts on new R & M *all-steel* hoists of one-half to 7½-ton capacities.

ROBBINS & MYERS, INC.
HOIST & CRANE DIVISION, SPRINGFIELD, OHIO

▲ Mention Item NED-1371 when writing ▲

KEEPS CONSTANT TAB ON CO_2



For accurate diagnosis of your combustion's health, there's no index so reliable as the amount of CO_2 in the flue gases.

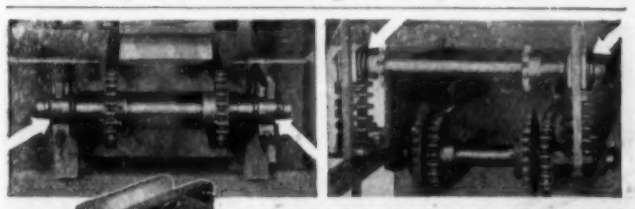
For downright accuracy in recording that information, 24 hours a day, there's no more reliable reporter than the Hays CO_2 Recorder.

Water operated, with no moving parts to wear out, this accurate instrument is a reliable aid to greater efficiency and economy, in small and large plants alike. For integral or remote mounting.

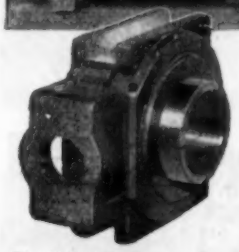
Bulletin 39-297 tells the whole CO_2 story—one you ought to read. Write for it.

The HAYS CORPORATION
COMBUSTION INSTRUMENTS AND CONTROL
MICHIGAN CITY, INDIANA, U.S.A.

▲ Mention Item NED-1372 when writing ▲



A TYPICAL TEC TAKE-UP INSTALLATION



The TEC Unit

The Bearing

If you prefer Take-Ups with Frame specify TF Series

CJB AHLBERG
BALL BEARINGS
FOR EFFICIENCY

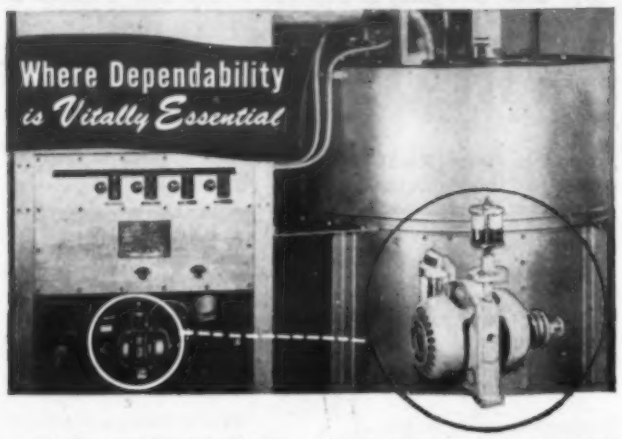
THESE COMPACT take-up units can be used in any number of installations where adjustments are required.

—Bearings are Full Self-Aligning Type—Will compensate for misalignment without impairing their efficiency.
—Housing is one piece with an easily removable end cap for bearing inspection.
—Large grease capacity—Fewer greasings per year.
—Housing-slides are machined to take standard cold rolled bars.
—Labyrinth Type seals—Frictionless, long wearing and exceptionally effective; keep lubricant in and dirt out.
—Expansion or non-expansion type, optional at no extra cost.
—This TEC Series is available in shaft sizes from ¾" to 2 3/16".

AHLBERG BEARING COMPANY
Manufacturers of CJB Master Ball Bearings
3042 WEST 47th STREET • CHICAGO, ILL.

▲ Mention Item NED-1373 when writing ▲

The Power Trend is to AIR!



Excellent example of the diversified applications of Gast Rotary Air Motors and Pumps is this installation on a Submarine Tender Oil Purifier. This Gast twin-fan-cooled pump was selected to provide combined vacuum and pressure continuously at full capacity, where utmost dependability is required.

If you have an application requiring dependable vacuum or pressure, there is a Gast Rotary Air Pump to meet your requirements.

Or if you have an explosion-proof application (with compressed air available) investigate the Gast Rotary Air Motor. Write for the new illustrated folder "Industry's Trend To Air for Power". Feel free to write us on your air power problems.

Address: GAST MFG. CORP.
115 Hinkley Street,
Benton Harbor, Mich.

GAST ROTARY AIR
MOTORS • COMPRESSORS
VACUUM PUMPS

▲ Mention Item NED-1374 when writing ▲

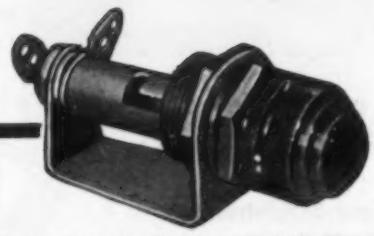
WORK HOLDING FIXTURE

Designed to hold small flat work for toolroom use and certain other types of production operations, Flat Top work holder overcomes difficulties encountered in drilling, countersinking and tapping small precision parts in which highly accurate perpendicularity is essential. Fixture is instantly ready to hold any type of work which is flat on bottom, varying in thickness from few thousandths up to 2 inches and in area from size of dime up to several inches square. Peripheral contour of work makes no difference.

Holder is also useful for many operations on small shapers and bench milling machines. One of supporting plates is perforated and provided with three studs. This end of fixture is used for milling and shaping work. Two studs are set in position to locate back of work and third is set at end to support wark against pressure of cutting tool. Fixture may be changed for other set-ups by simple process of dropping three studs into three holes. Adjustment for work thickness is made by turning knurled head of ball joint stud. Made by Mead Specialties Co., Dept. 233, 15 S. Market St., Chicago 6, Ill.

▲ Mention Item NED-1377 when writing ▲

Gothard VIBRATION RESISTING Shutter Type PILOT LIGHT



Gothard No. 431 Pilot Light is used in aircraft, ships, tanks, signal and similar applications where vibration is an important factor. Precision, snug fitting jewel and lens holder maintains set position. 90° rotation of shutter provides gradation of light from bright, thru intermediate glows, to dim glow, or total dark. Faceted or plain Jewels. Also available with polarized lens. Red, green, amber, blue or opal lens.

Gothard MANUFACTURING COMPANY
Write for complete information
1380 N. NINTH STREET, SPRINGFIELD, ILL.

▲ Mention Item NED-1380 when writing ▲

SEND FOR THIS FOLDER

AMERICAN WELDED Steel Rings...

• Flash welded steel rings, bands and ring assemblies save machining time, provide greater accuracy and uniformity in wall thickness and width dimensions, eliminate many finishing operations, allow closer tolerances and reduce costs.

Investigate these Advantages!

BUY MORE WAR BONDS

THE AMERICAN WELDING & MFG. CO.
WARREN, OHIO

▲ Mention Item NED-1375 when writing ▲

MAGNESIUM GRINDERS

Equipped especially for grinding of magnesium parts, series RW 10, 12 and 14-inch grinders have heavy plate wheel guards with pocketless direct exhaust outlets for connection to dust collecting system. Machines are also equipped with explosionproof electrical equipment. Oversize spindles provide vibrationless operation. Large bearings are sealed against ingress of dust or dirt. Use of multiple V-belt drive permits any required spindle speed. Any standard make of motor can be used in base pedestal.

Complete equipment includes mounting for any 1, 2 or 3 horsepower motor in base, multi-V-belt driven spindle, explosionproof electrical equipment, hinged wheel guards with spark deflectors, adjustable work rests, tool tray and removable water pot. Wheels and eyeshields shown are extra. Made by Hammond Machinery Builders, Inc., 1623 Douglas Ave., Kalamazoo 54F, Mich.

▲ Mention Item NED-1378 when writing ▲

The new DI-MET RESINOID BONDED DIAMOND ABRASIVE WHEEL CATALOG

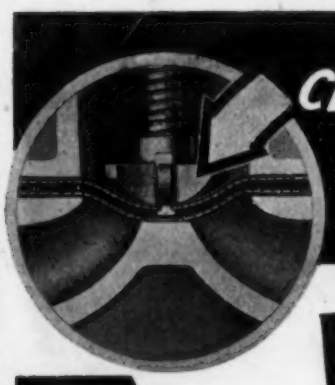
Gives you all details on DI-MET resinoid bonded diamond wheels. Especially recommended for users of carbide tipped tools and milling cutters. Shows DI-MET wheel types, specifications, prices and discounts. Write for your free copy today!

FELKER DI-MET

FELKER MANUFACTURING CO.
1125 BORDER AVE., TORRANCE, CALIF.

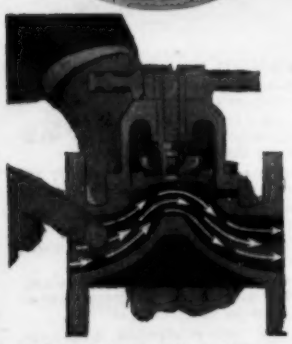
MANUFACTURERS OF DIAMOND ABRASIVE WHEELS

▲ Mention Item NED-1381 when writing ▲



YOU CAN CLOSE THIS VALVE TIGHT — even over a chunk of Scale

HILLS-McCANNA SAUNDERS PATENT DIAPHRAGM VALVES



Streamlined Flow Area
— no pockets or ports to obstruct flow — cuts friction — maintains pressure.

Nothing can stop this Hills-McCanna Diaphragm Valve from functioning properly. Scale or sediment on the seat are simply cushioned over snugly by the resilient diaphragm — tight closure is a certainty — no possibility of leaks or drips.
Yet this remarkable advantage is only one of the many afforded by the outstanding diaphragm principle which completely isolates working parts from fluid, eliminating wear, corrosion clogging, sticking — all repairs.
Interesting Catalog V-41 on request.

Use these valves for chemicals, abrasives, viscous and volatile substances, air, water, oxygen and acetylene gases, etc.

HILLS-McCANNA CO.
2455 NELSON STREET, CHICAGO
PROPORTIONING PUMPS • AIR & WATER VALVES • CHEMICAL VALVES
MARINE VALVES • FORCE-FEED LUBRICATORS • DOWMETAL CASTINGS

▲ Mention Item NED-1376 when writing ▲

AIR

the ECONOMICAL Way to Convey Many Materials

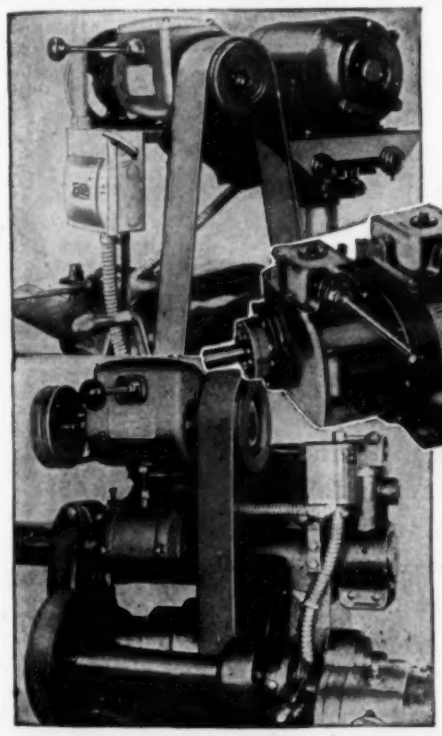
Pneumatic conveying (under pressure or suction) of bulk or granular materials is finding ever-increasing favor as a definite means of saving time—with the additional advantages of being cleaner and more sanitary.

The blower is the heart of the system, and must possess the ability to build up pressure or suction needed to keep materials moving in the conveying lines. That's why Engineers specify Roots-Connersville Positive Displacement Blowers or Vacuum Pumps. In addition to trouble-free operation, "R-C" units can be counted on to give unusually long service. We build blowers to meet any capacity and moderate pressure requirement, but do not furnish complete systems.

Roots-Connersville Blower Corp.
403 WESTERN AVENUE
CONNERSVILLE, IND.

Roots CONNERSVILLE SINCE 1854
Rotary Positive BLOWERS

▲ Mention Item NED-1379 when writing ▲



Western MASTER (1-5 h.p.) transmission including standard bracket f.o.b. Detroit 95.00

Western SUPER (10-30 h.p.) suitable for replacing gear boxes on large boring mills, radials, Ingersol milling machines etc. to motorize large slotters, engine and turret lathes f.o.b. Detroit 495.00.

Western MAJOR (5-10 h.p.) transmission including standard bracket f.o.b. Detroit 145.00

SEND FOR NEW FOUR PAGE CATALOG . . .
prompt deliveries on high priorities

up to 30 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.
WESTERN TRANSMISSIONS
WESTERN MFG. CO., 3400 SCOTTEN, DETROIT, MICHIGAN

▲ Mention Item NED-1382 when writing ▲

Only Ozalid gives this versatility

"THE OZALID MODEL B"

OZALID whiteprints are produced in two steps —Exposure and Dry Development.

Dry Development distinguishes Ozalid from all other Processes. It eliminates baths, driers and plumbing connections. And it allows the use of sensitized materials which would become distorted or wouldn't develop if other methods were employed.

WITH OZALID YOU GET THIS VERSATILITY

- Prints having blue, black, maroon lines on a white background.
- Transparent papers, cloth and foils which can be used to make "duplicate originals" of your valuable tracings . . . reclaim soiled originals . . . to eliminate drafting waste when making design changes.
- Cut sheets as well as roll stock may be used. You can eliminate trimming waste.
- All prints produced in same manner—no variations in production.

Ozalid whiteprint machines are designed for large and medium production. Also, Dry Developing units for use with your present printer.

Write for catalog and samples of Ozalid whiteprints.

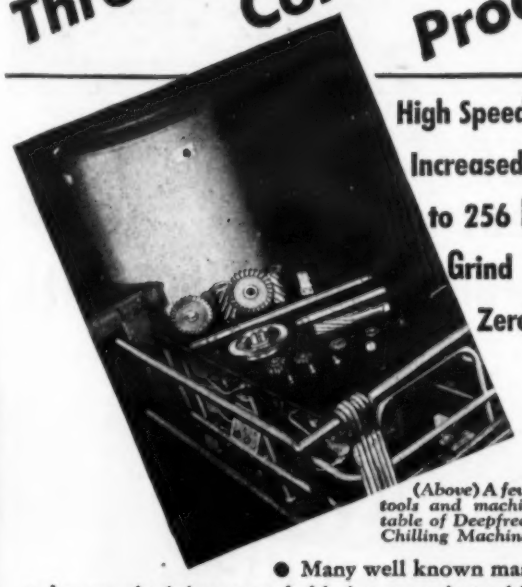
OZALID PRODUCTS DIVISION

General Aniline & Film Corporation • Johnson City, N. Y., U. S. A.

OZALID IN CANADA—HUGHES OWENS CO., LTD., MONTREAL

▲ Mention Item NED-1383 when writing ▲

Proof of Increased Tool Life Through this New Cold Treating Process



High Speed Drill Life Increased from 48 to 256 Holes per Grind by Sub-Zero Treating

(Above) A few cold treated tools and machine parts on table of Deepfreeze Industrial Chilling Machine.

● Many well known manufacturers today are obtaining remarkable increases in tool life by cold treating high speed cutting tools in Deepfreeze Industrial Chilling Equipment. Among the many cold treating tests conducted by a large and prominent machine tool manufacturer is the treating of high speed drills used to drill four 11/32" diameter holes in a yoke lever part made from S.A.E. 4340 steel forging with the Brinell of 387. Using a special two-spindle opposed head machine, this operation is performed at spindle speeds of 450 r.p.m. with a feed of 5" per minute.

Before cold treating in a Deepfreeze, the best possible performance of these drills was 48 holes per grind. Now, after treating for two hours at −120° F. in a Deepfreeze Industrial Machine, the average results are 256 holes per grind, or an increase of over 500%.

This manufacturer now requires that every cutting tool that comes into the plant be cold treated before it is used, and also that all cutters be cold treated after sharpening to restore original hardness of the actual cutting edges that may be slightly softened during resharpening operations.

Find Out How You Can Use Deepfreeze Chilling Machines in Your Plant . . .

For the complete and latest data on the use of cold treatment of metals in industry today, get this new Deepfreeze Metal Chilling Booklet. It contains complete details, specifications and lists other applications of Deepfreeze Chilling equipment. Write for your free copy today.

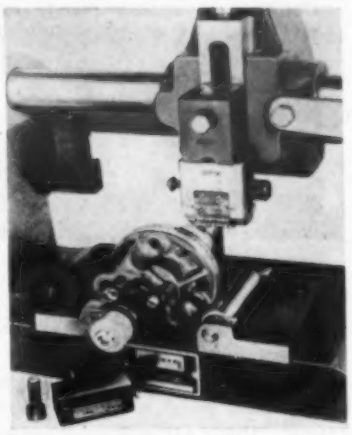
Trade-mark DEEPFREEZE Registered United States Patent Office

Deepfreeze 2316 Davis Street, North Chicago, Illinois

Division of Motor Products Corp. Detroit, Michigan

▲ Mention Item NED-1384 when writing ▲

NUMBERING MACHINE



Use of combination numbering head and special fixture in No. 9A machine speeds up marking of curved surfaces on aircraft parts. Non-adjustable cradle rolls and socket type mandrel fixture permit marking of illustrated part at high speeds. One part is marked at forward stroke and another on return stroke. Changing of characters is accomplished by turning knob at right of numbering head and twirling wheels to desired irregular or consecutive numbers. Marking die may be substituted for numbering head. Made by **The Acromark Co.**, 7-11 Morrell St., Elizabeth 4, N. J.

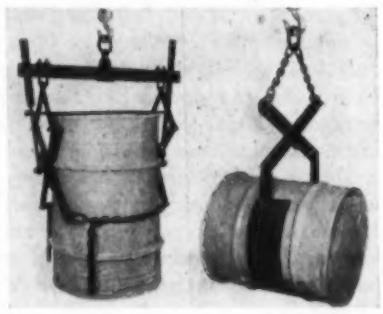
▲ Mention Item NED-1385 when writing ▲

TRUCK TIRE

Available in 7.50-20 size, eight ply or larger, this Speedliner Silvertown truck tire has reduced tread thickness at shoulders and addition of ventilating grooves in shoulder blocks. These are claimed to lessen operating heat, while other improvements reduce danger of sidewalls cracking. Sidewall is thicker at base of grooves between shoulder blocks and ornamental rib on sidewall is constructed shallower to provide better distribution of stresses. Increased tire life is stated to be afforded. Made by **The B. F. Goodrich Co.**, Dept. E, 500 S. Main St., Akron, O.

▲ Mention Item NED-1386 when writing ▲

BARREL AND DRUM LIFTERS



Designed to handle barrels and drums horizontally and vertically, these two lifting devices have standard capacities of 1200 pounds. Special sizes are available to specification.

Vertical lifter No. B-1 is lowered onto barrel and encircling chain placed in grab hook. Feature of this lifter is automatic opening. Lower cross bar upon contact with top of drum, opens arms and makes application and removal a matter of seconds, Adjustment for various diameters of containers is automatic. Horizontal lifter No. B-2 is also effective and simple in operation. Ease of application and removal is apparent. Made by **Never-Slip Safety Clamp Co.**, Mamaroneck Ave. & Elliott St., Mamaroneck, N. Y.

▲ Mention Item NED-1387 when writing ▲

MONO-BLOCK

A One-block Insulation

effective up to 1700° F

Made from *black* rockwool, B-H Mono-block is high-temperature-resistant (up to 1700° F.) and has exceptionally low thermal conductivity. You'll find it lighter, and more efficient, too, because its long, straight fibres are interwoven in layers by an exclusive, patented process. In each block, millions of tiny air-cells hold back the heat, preventing its escape. Because it is a one-block insulation, Mono-block delivers substantial savings in installation costs, too. Send for sample and new bulletin.

Baldwin-Hill Co., 541 Klagg Ave., Trenton 2, N. J. Plants in Trenton, New Jersey; Kalamazoo, Michigan; and Huntington, Indiana.

Baldwin-Hill COMPANY

BH HEAT & COLD INSULATIONS

▲ Mention Item NED-1388 when writing ▲

MAKE DUST GO with TORNADO !!!!!!!

with a

TORNADO

PORTABLE ELECTRIC BLOWER

KEEP your motors and machinery running at peak efficiency by keeping them clean with the TORNADO Portable Electric Blower. Its powerful blast of clean, dry air cleans out dust, dirt and lint. Reduces power, repair and replacement costs. *Investigate!*

BREUER ELECTRIC MFG. CO.
5106 N. RAVENSWOOD AVE.
CHICAGO 40, ILL.

TORNADO PORTABLE ELECTRIC BLOWER

FREE TRIAL
Send for complete details and FREE TRIAL Offer.

▲ Mention Item NED-1389 when writing ▲

JOHNSON BRONZE SLEEVE TYPE BEARINGS

Electric Motor Bearings

● Good motor performance depends to a great extent on the bearings. If you want to get the best from your motors, install Johnson Bearings. Correct in every detail, they slip right into place with a minimum of effort. Reasonably good service is available on more than 250 types. Write for Catalogue.

JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS
580 S. MILL STREET NEW CASTLE, PA.

▲ Mention Item NED-1390 when writing ▲

You can STRETCH MANPOWER *by using*

CLARK FORK TRUCKS

CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN, U.S.A.

A Product of CLARK EQUIPMENT COMPANY

▲ Mention Item NED-1391 when writing ▲

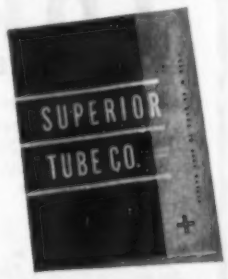
WELDRAWN

THE SUPERIOR WELDED (AND DRAWN) METAL TUBING FROM 5/8" OD DOWN

WELDRAWN is the trademarked Superior Tube Company welded tubing which combines practically all of the physical and metallurgical qualities of seamless . . . smooth bright finish, homogenous structure, close tolerances, high tensile strength — with economy. WELDRAWN has a firm preferred place in industry . . . the result of wide usage and highly satisfactory performance.

Produced in Stainless Steels (various analyses), and "Monel."

Write today for Bulletin No. 48.



SUPERIOR TUBE COMPANY
NORRISTOWN, PENNSYLVANIA

"FOR FINE SMALL TUBING"

▲ Mention Item NED-1394 when writing ▲

SLY DUST COLLECTOR takes PHARMACEUTICALS, too

Dust created by grinders in the plant of a large pharmaceutical company is thoroughly filtered from the air in the Sly Dust Filter shown above. This keeps the plant spick and span, saving materials and providing good working conditions • This is but one of over 5000 installations in operation today. Sly Dust Filters are collecting lll kinds of dust in 57 industries. What is *your* dust problem? Ask for Bulletin 98.

SLY THE W. W. SLY MFG. CO.
4748 TRAIN AVE., CLEVELAND 2, OHIO
INDUSTRIAL DUST CONTROL

▲ Mention Item NED-1395 when writing ▲

Don't BURN Paper CONVERT IT!

AIRFLUFF PAPER SHREDDER MAKES EXCELSIOR OUT OF CONFIDENTIAL PAPERS, BLUEPRINTS OR ANY WASTE PAPER

Here's the machine that destroys paper yet saves it! The AIRFLUFF Paper Excelsior Shredder, easily shreds, separates and fluffs old newspapers, confidential papers, blueprints, magazines, waste paper, corrugated cartons, tissue, Cellophane and waxed paper. Low price, simple to install. Power and maintenance cost less than 2c per 100-pound bale. Absolutely safe—present employees can easily operate. Cuts in widths from 1/8" to 3/8". Model No. 14 shreds 600 to 1800 lbs. per hour. Model No. 10 shreds 200 to 800 lbs. per hour. Write today for prices and complete facts about these remarkably simple, sturdy and efficient new AIR-FLUFF Paper Shredders.

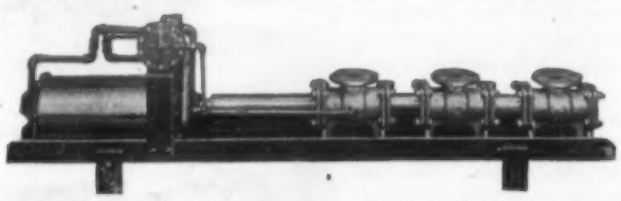
WRITE TODAY

MITTS & MERRILL • SAGINAW, MICH.
1000 SOUTH WATER STREET
BUILDERS OF MACHINERY SINCE 1854

▲ Mention Item NED-1396 when writing ▲

PIPELINE INTERCONNECTOR

Designed to deliver water from either of two inlets to common outlet, this Sure-Shift Interconnector is hydraulic valving mechanism. It makes standby water supply imme-



diately available without possibility of contamination. Choice of inlets is made automatically according to hydrostatic pressure prevailing at inlet customarily used. Should this pressure drop below predetermined point, usually about 20 pounds per square inch, water supply is automatically shifted to standby source. Upon resumption of pressure in customary source of water, supply connection shifts back to original position.

Protection against contamination at every point is assured through design. Uninterrupted supply of water is assured for all types of industrial or process operations. Public health requirements are met for public utility applications. Only three pipe connections are required. Hydraulic cylinder supplies motive power for automatic operation. Present size available is for 2-inch lines. Made by Industrial Interconnector Co., 2152 Niagara St., Buffalo 7, N. Y.

▲ Mention Item NED-1397 when writing ▲

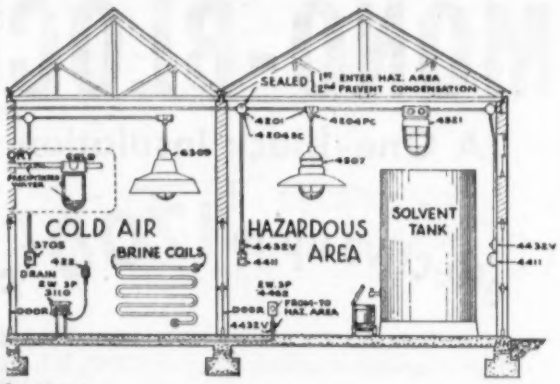
COMBUSTION CONTROL

Applicable to boilers fired with coal, oil or gas, type P combustion control equipment provides effective and reliable regulation for smaller industrial and municipal power plant. This system continuously proportions fuel and air to steam demand, and at same time, controls furnace pressure. To regulate fuel-feed and draft, either forced or induced, system provides simple electrical balance, using Wheatstone Bridge principle by which settings of valves, dampers or vanes are varied in definite proportion to steam demand as directed by master controller. Remaining draft damper or other device is simultaneously regulated by furnace pressure controller.

If for any reason operator does not desire full automatic control, he can operate any drive units from push button stations. Without leaving panel, he can switch from full automatic control to base load control, and regulate air supply from single push button, with fuel supply automatically following in proper relationship and with furnace pressure automatic. He can, as easily, regulate both air and fuel from push buttons, with furnace pressure or he can switch to complete push button control and regulate each drive unit separately from panel.

Independent operation of drive units allows controllers to be serviced without interrupting boiler operation. Except for drive units, all equipment can be shipped on easy-to-install panel. Or if preferred, equipment can be mounted on complete boiler panel along with draft gages and other instruments. Drive units are connected to panel by simple conduits which any plant electrician can install. Made by Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.

▲ Mention Item NED-1398 when writing ▲



Insure

ALL HAZARDOUS AREAS

The layout above shows how four R & S explosion-proof products meet the most exacting demands of safety in an extremely hazardous area.

WHEN YOU PLAN OR REMODEL a building, an outdoor installation, a ship or an electrical machine, it is not always possible to predetermine the hazards it will encounter during its long life of service. With R & S, the electrical system can be made vaportight, dust-tight, moisture-proof, waterproof or explosion-proof—or all five if necessary. And R & S Ever-Lok wiring devices will prevent accidental interruption of service for the life of the job.

Since 1902

RUSSELL & STOLL COMPANY
EXPLOSION-PROOF WATER-TIGHT AND EVER-LOK RECEPTACLES, PLUGS, CONNECTORS, SWITCHES AND FIXTURES
125 BARCLAY STREET • NEW YORK 7, N. Y.

2

▲ Mention Item NED-1399 when writing ▲

CRESCENT

GENUINE

A.B.C.

ARMORED BUSHED CABLE

Now Available

CONDUCTORS—flame retarding, printed showing size, type of insulation and voltage.

INSULATING BUSHING—easy to insert, as paper unwraps from under both ends of armor to make room for the bushing.

STEEL ARMOR—Low resistance, electrogalvanized for permanence.

Thoroughly tested at several stages of manufacture, and receiving a final test of 2000 volts between conductors and armor.

CRESCENT has unexcelled facilities for the complete manufacture of Armored Bushed Cable in all its steps. When you buy CRESCENT A.B.C. ARMORED BUSHED CABLE you buy the best. Do not be satisfied with any substitute.

CRESCENT INSULATED WIRE & CABLE CO.
TRENTON, N. J.

CRESCENT WIRE and CABLE

▲ Mention Item NED-1400 when writing ▲

• Roustabout Cranes are hustling war materiel at home and overseas. (U. S. Signal Corps Photo).

Move it Fast Anywhere, Any Time with

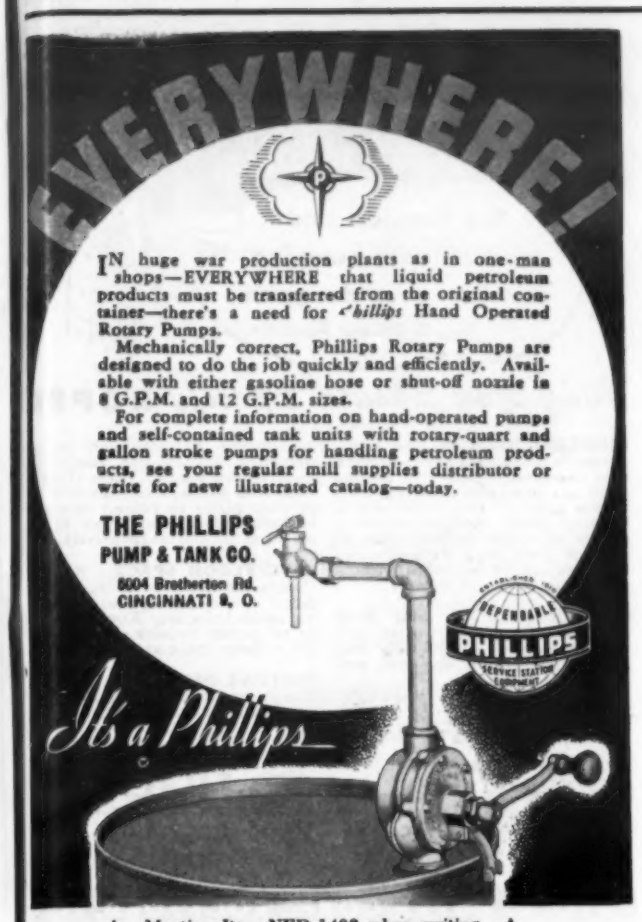
The Free-Roving Tractor-Footed **ROUSTABOUT CRANE**

THE big, bulky stuff you need to move, load, unload or stack—too heavy for men and outside the range of your installed handling equipment: Roustabout Crane handles it quickly, easily. It's *where* you want it, *when* you want it, day or night, prevents delays—tackles 6-ton loads without a whimper. Wheels or crawler tracks, all tractor power, ball-bearing boom turntable, gears in oil, full swing boom—built for years of overwork—a highly profitable investment in fast action around war-busy factories, airports, railroads, docks and warehouses. To keep things moving now, to cut post-war costs, write today for the complete Roustabout story.

THE HUGHES-KEENAN COMPANY
565 Newman Street • Mansfield, Ohio

ROUSTABOUT CRANES
By Hughes-Keenan
Load-Handling Specialists Since 1904

▲ Mention Item NED-1401 when writing ▲



▲ Mention Item NED-1402 when writing ▲

TO END ALL CORROSION PROBLEMS

Saran is a tough thermoplastic originally made to replace such strategic war materials as aluminum, stainless steel, nickel, copper, brass, tin and rubber. Now found adaptable to a wide range of uses in product designing, food processing and wherever non-corrosive materials are necessary. Its insulating qualities, flexibility and ease of handling make it extremely valuable in installations dealing with oils, gases, air, water and corrosive chemicals. It is available in tube, pipe, sheet, rod and molded fittings.

Technical Bulletin P-8 will be sent on request. Address Dept. SK
Pat. No. 2160931

HODGMAN RUBBER CO.
FRAMINGHAM, MASS.
NEW YORK . . . 261 Fifth Avenue
CHICAGO . . . 412 South Wells St.
SAN FRANCISCO . . . 121 Second St.

▲ Mention Item NED-1403 when writing ▲

DAYTON SAFETY LADDER Co.
121-22 W. 3rd ST. CINCINNATI, OHIO

▲ Mention Item NED-1404 when writing ▲

HYDRAULIC FUSE

Designed to act as safety shut-off in event of ruptured or bullet-pierced hydraulic system, this quantity-measuring type hydraulic fuse is being used in military aircraft. Fuse remains open as long as hydraulic system operates normally. It prevents loss of fluid in system and also permits normal operation of undamaged portion of system.

Device operates successfully regardless of variations in either oil viscosity or rate of flow. Because of action of internal dashpot, flow rates as high as 20 gallons per minute do not affect basic functioning. It is not affected by back pressure, surges or large amounts of air which may be left in system because of incomplete bleeding.

Fuse capacities range from 10 to 40 cubic inches. Latter capacity will protect cylinder whose displacement is 40 cubic inches or less. It may be mounted in any position and fits directly in hydraulic lines leading to hydraulically actuated elements. Made by **Simmonds Aerocessories, Inc.**, 10 Rockefeller Plaza, New York, N. Y.

▲ Mention Item NED-1405 when writing ▲

SMALL INDUCTION MACHINE

Departing somewhat from conventional design of high frequency units, this 7½-kilowatt Tocco Junior induction machine features work unit separate from power unit. Mobile top may be removed, if desired, to facilitate shop operations. It is connected to power unit by cable which may be of any required length.

Equipment provides wide range of induction heating for brazing, annealing, heating for forming and for hardening small parts. It is particularly suitable for brazing of carbide tip tools and may be used as utility machine in shop tool room.

Housed in rigid welded steel cabinet, power unit is equipped with vertical 220/440-volt, 3-phase, 60-cycle motor-generator set which provides 9600-cycle high frequency power. Set is designed for continuous operation. Power or lower unit stands 30 inches high and houses motor-generator, cycle controls, air filters and operating meters. Timer is located on side with field control switches.

Work or upper unit houses high frequency transformer, condensers and panel to which work fixtures or inductor coils can be attached easily. For surface hardening, work unit contains quench valve, manifold and gage. Stop and start push button with signal light is located in upper right corner of unit. Weight of top is such that it can be transported without difficulty or fitted into production line without disturbing arrangement of line. If required, quench water can be brought to machine with garden type hose and drainage effected through similar connection. Made by **The Ohio Crankshaft Co.**, Dept. 3, 3800 Harvard Ave., Cleveland 1, O.

▲ Mention Item NED-1406 when writing ▲

A New Art
OF FORMING FORMICA SHEETS

War has resulted in the development of new ways of forming completely cured Formica sheets. At North America Aviation where Plastic Engineer William Beech developed them, many parts, shaped in this way, are in regular production and use. Sharp bends can be made in the material without fracture. The inside diameter of the radius may be no greater than the thickness of the material. Formica so formed will not dent or deform under ordinary blows. It maintains its new shape under all conditions of humidity and climate. The parts are permanent, substantial and efficient.

THE FORMICA INSULATION COMPANY
4625 SPRING GROVE AVENUE
CINCINNATI 32, OHIO

FORMICA

▲ Mention Item NED-1407 when writing ▲

LINK-BELT CAR SPOTTER

SPEEDS PRODUCTION IN PIPE BENDING

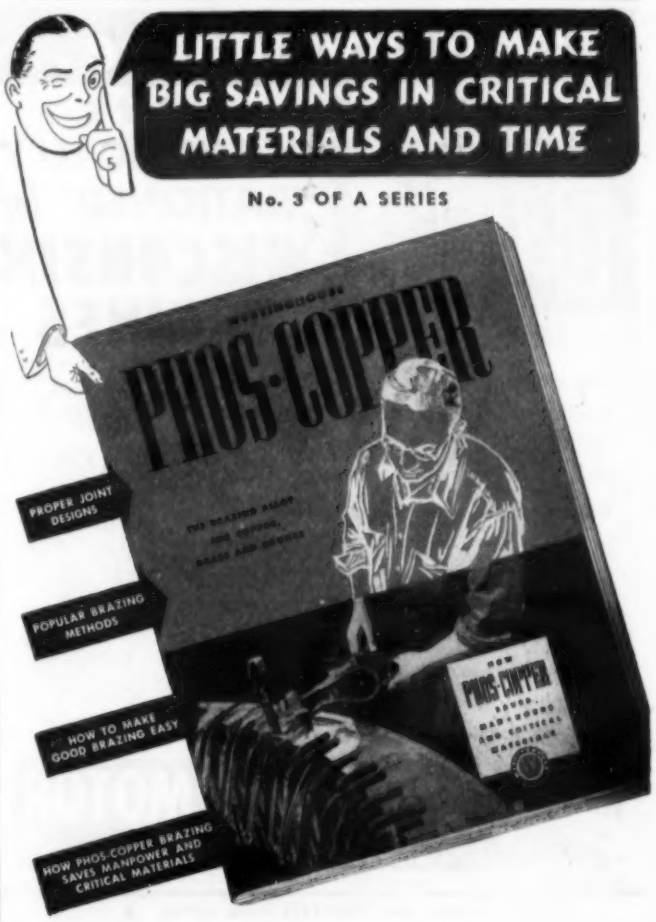
Prior to the installation of this No. 10 L-B Car Spotter the job of bending pipe was slow and tedious work, which was done by two men with a hand operated drum hoist. Now production has been stepped up with one man operating the motorized car spotter resulting in handling larger diameters of pipe than ever before—with less effort.

In every industry, thousands of L-B Car Spotters are in daily service moving cars and doing other back-breaking jobs quickly and easily at very low cost. Link-Belt Car Spotters are furnished as stationary or portable units in two sizes, with 5 or 10 H.P. motors, for rope pull of 5,000—and 10,000 pounds at a speed of 45 F.P.M.

Send for copy of Car Spotter Book 1992

LINK-BELT COMPANY
2410 W. 18th St. Chicago 8, Illinois 9442

▲ Mention Item NED-1408 when writing ▲



Get the facts

ON BRAZING WITH PHOS-COPPER

Everyone interested in joining nonferrous metals needs a copy of this new 12-page Westinghouse Brazing Booklet—for it's jammed full of timely ideas for saving man-hours and critical materials. For example, there is an easy-to-understand explanation of proper joint design . . . and a pictorial page showing ten rules for better brazing.

This valuable new booklet also describes Phos-Copper, a Westinghouse brazing alloy for speedy joining of nonferrous joints. Physical property tables, Phos-Copper test and application photographs, and advantage and result charts are included in the discussion of this superior brazing alloy.

The Phos-Copper brazing booklet has proved so popular that our first printing (completed just this month) is almost exhausted. Don't be disappointed. Write for your free copy today. Ask for B-3201. No obligation, of course. Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa., Dept. 7-N.

J-90456

Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

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modine
UNIT HEATERS

✓protect manpower
✓save fuel ✓save space
✓cost less to install and less to maintain

Get Modine Catalogs 143-A and 143-B

HOW YOU CAN GET modine UNIT HEATERS
On an order carrying a priority rating of AA-5 or better. Or, on a repair order—"MRO"—for instance.

MODINE MANUFACTURING COMPANY
1702 RACINE STREET • RACINE, WISCONSIN

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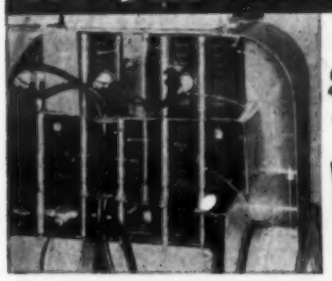
AIR in Abundance . . but it's SCIENTIFICALLY "RATIONED" for WISCONSIN ENGINES



The amount of air required for cooling the lower half of an engine cylinder won't do for the "business end", where the highly compressed fuel charge explodes.

With a continuous, large-volume air-flow to draw from, Wisconsin engineers have long since figured out just how much air to *ration* to each section of the engine, for most efficient cooling.

This is important in relation to the satisfactory performance of your power-operated equipment.

Most H.P. per pound
WISCONSIN MOTOR Corporation
MILWAUKEE 14, WISCONSIN, U. S. A.
World's Largest Builders of Heavy-Duty Air-Cooled Engines

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JUST OFF THE PRESS!

A brand-new 32-page catalog filled with tables, specifications and other data covering the complete line of Chicago "Safety Plus" Socket Screw Products. If you have not received your copy—write us direct.

THE CHICAGO SCREW CO.
ESTABLISHED 1872
1026 SO. HOMAN AVENUE CHICAGO, ILL.

▲ Mention Item NED-1412 when writing ▲

ENGINE DRIVEN ARC WELDER

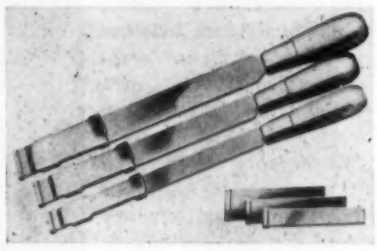
Rated at 200 amperes, this Shield-Arc arc welding machine is driven by enclosed, rubber-mounted, 29 horsepower gasoline engine. Supplied complete with canopy and base, machine has current range of 40 to 250 amperes. Dual control of welding current is accomplished by adjustment of series field and generator speed. In addition to use with bare or coated electrodes, this model supplies uniform current for carbon arc welding.

Generator control or "job selector" assures accuracy of open circuit voltage and permits precise control of engine speed from 1500 to 1150 revolutions per minute. Control may be used also to reduce engine speed manually to as low as 750 revolutions per minute whenever it is necessary to stop welding for intervals of a few minutes. Rated current of 200 amperes may be obtained at generator speeds of as low as 1200 revolutions per minute. Made by **Lincoln Electric Co.**, Dept. AP-574, 12818 Coit Rd., Cleveland, O.

▲ Mention Item NED-1413 when writing ▲

CARBIDE TIPPED SCRAPERS

Scraper blades tipped with Carboloy are available in three widths to fit company's line of standard hand scrapers. It is only necessary to remove high speed steel blade and insert tungsten carbide tipped blade. Life of these blades is reported to be from eight to ten times that of steel blades on similar service. Made by **Anderson Bros. Mfg. Co.**, 1901 Kishwaukee St., Rockford, Ill.



▲ Mention Item NED-1414 when writing ▲

HONOR ROLL PLAQUE

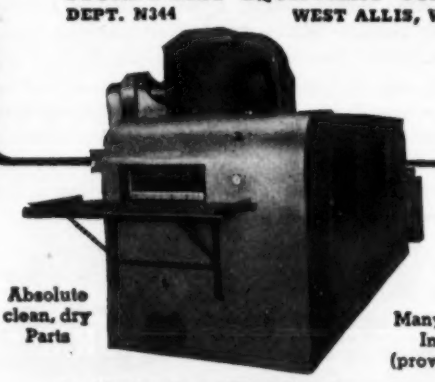
Of sculptured design, this honor roll plaque is finished to simulate bronze. In addition to being duplication of bronze in appearance, it has advantage of being lighter in weight and less expensive than this metal. Considerable critical materials are thus saved.

Individual name plates may be added to or removed from plaque with minimum of effort. Several standard sizes are available for holding practically any required number of names of those in the Services. Made by Royal Emblem Div., **Royal Incentives**, 42 John St., New York 7, N.Y.

▲ Mention Item NED-1415 when writing ▲

Active SOAK

PROVED ORIGINAL
"STURDY-BILT" METHOD for CLEANING METAL-PARTS
Write for details
STURDY-BILT EQUIPMENT CORP.
DEPT. N344 WEST ALLIS, WIS.



Absolute clean, dry Parts

Many "duplicate" Installations (proved efficiency)

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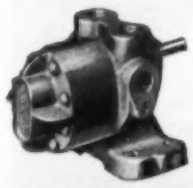
Why You Should Specify **ROPER**

SIMPLEST DESIGN. The Roper design is recognized as the simplest ever conceived. Only two moving parts . . . equal size pumping gears (either spiral or spur) operating at the same speed. Another important feature of Roper design is that all internal parts such as gears and bearings can be inspected without disturbing piping or power.

LONGER LIFE. The four large replaceable bearings, two on each side in Roper "hydraulically balanced" pumps are designed and constructed to withstand severe operating abuses and adequately handle peak loads. These flanged high lead bronze bearings also act as wear plates to protect face and backplate from wear. Can be replaced easily and inexpensively.

SAVE FLOOR SPACE. Roper Pumps are designed to operate at direct motor speeds, thus eliminating gears, belts, etc. Roper "direct-drive" pumps require only 48% as much floor space as other models.

POSITIVE DELIVERY. Roper Pumps produce a steady, positive flow absolutely free from pulsation.



HYDRAULICALLY BALANCED

Write For Catalog No. 349

ROPER *Rotary Pumps*

GEO. D. ROPER CORP., ROCKFORD, ILL.

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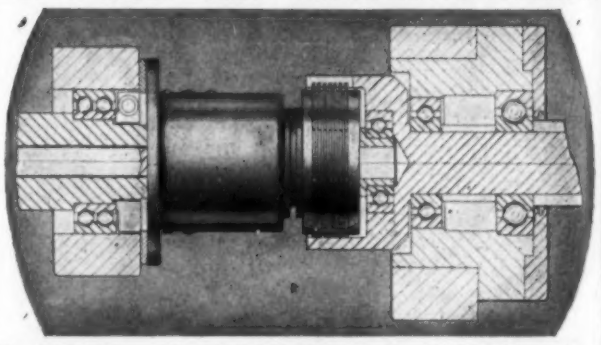
How PULLMORE CLUTCHES Drive and Brake Automatic Lathes



This Single Type PULLMORE Multiple Disc CLUTCH application features a shifter spool with a moulded facing, that serves as a brake. The clutch and brake are operated by a control rod, through a hollow shaft.

Send for These Power Transmission Bulletins

They show how PULLMORE Multiple Disc CLUTCH exclusive features are being used to give post-war products competitive advantages. Give capacities, dimensions and specifications. Contain application diagrams and photos of PULLMORE equipped machines.

Rockford Drilling Machine Division Borg-Warner Corporation
312 Catherine Street, Rockford, Illinois, U. S. A.
Pullmore Clutches are sold by Morse Chain Co., offices in principal cities

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Better Piston Rings for Post-War Engines

● To Ramco's quarter-of-a-century of specialized experience in engineering advanced types of piston rings, is now being added Ramco's war-time production of high precision piston rings for all types of engines.

Typifying the advancements which will be available for standard equipment and replacement in post-war automotive, aircraft and industrial engines are those found in the Ramco Micro-Lap Piston Rings for military use. Through Ramco's developments, these Aircraft Rings are now being produced with precision finishes in the millionths of an inch, with uniformity and speed.

Ramsey Accessories Mfg. Corp.
3729 Forest Park Boulevard,
St. Louis 8, Mo.

RAMCO
Especially Engineered
PISTON RINGS
FOR YOUR SPECIFIC REQUIREMENTS
FOR REPLACEMENT . . . FOR ORIGINAL EQUIPMENT

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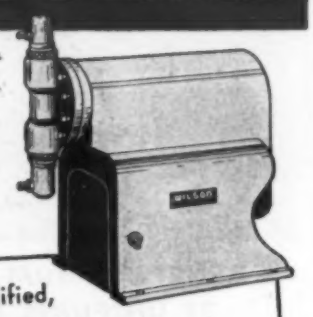
FOR ACCURACY AND TROUBLE-FREE OPERATION



in CHEMICAL PROPORTIONING for PROCESSING INDUSTRIES and for Water and Sewage Treatment

. . . insist on the simplified, proved-by-practice

WILSON PULSAFEEDER

Packless, positive displacement piston pumps of superior design.

Engineered and Manufactured by

WILSON CHEMICAL FEEDERS, INC.

Literature on Request

202 CLINTON STREET • EST. 1923 • BUFFALO 4, N.Y.

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ANOTHER SERVICE STRIPE

45 YEARS of Practical Solder Experience at Your Command

• Kester's forty-five years of developing, making and improving soldering alloys and fluxes—forty-five years of experience in their practical application to every industrial use is at your service! Kester engineers and laboratory technicians will gladly assist you, without obligation, in setting up any soldering operation to obtain smoothest production, best and most profitable results.

• Kester Solder products—the famous Cored Solders, fluxing compounds, wire solders and specialties—offer a complete and outstanding solder service to industry. Kester patents, based on years of careful research, cover many important and exclusive developments.

• Whatever your solder requirements, put them up to Kester!

★ BUY WAR BONDS ★

KESTER SOLDER COMPANY
4249 Wrightwood Ave., Chicago 39, Illinois
Eastern Plant: Newark, N. J. Canadian Plant: Brantford, Ont.

KESTER Cored Solders
STANDARD FOR INDUSTRY

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$BB_2 + EP = \frac{LT}{V/P}$

FORMULA FOR PERFECT *flexibility*

Specify CHIKSAN Ball-Bearing Swivel Joints and you specify the only joint built to the formula for perfect flexibility:

BB_2 = Double rows of ball bearings.
EP = Effective Packing Element—self-adjusting for:
V/P = Pressure or Vacuum Service
LT = Resulting Low Torque.

CHIKSAN Ball-Bearing Swivel Joints are supplied in over 500 different Types, Styles and Sizes. End connections optional. Write for latest Chiksan Catalog and Engineering Data.

CHIKSAN REPRESENTATIVES IN PRINCIPAL CITIES DISTRIBUTED NATIONALLY BY CRANE CO.

CHIKSAN TOOL COMPANY
Ball Bearing SWIVEL JOINTS for ALL PURPOSES
BREA, CALIFORNIA

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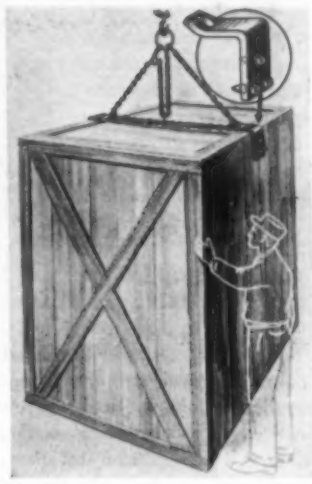
SPIKE TYPE BOX GRAB



Recommended for use in grabbing, holding and lifting large export boxes, heavy boxed machinery or similar boxed merchandise on which spiked grips may be used, this grab has gripper plates which are fitted with replaceable cone headed spike bolts. Four models are available in capacities of 1000, 2000, 3000 and 4000 pounds respectively. The heavier the load the tighter the hold. Grab may be used on boxes up to five feet wide. Chain length is adjustable for high or low ceilings. Made by **The Palmer-Shile Co.**, 7116 West Jefferson Ave., Detroit 17, Mich.

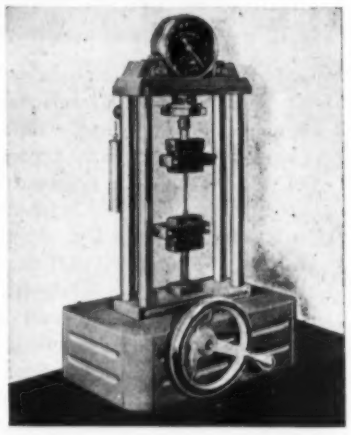
▲ Mention Item NED-1423 when writing ▲

REGULATOR TUBE

Designated as T-6 tube, this compact automatic regulator is particularly useful in equipment where space is at premium. It is available with voltage across unit of 1 to 10 volts and having current carrying capacities ranging from 0.15 to 1 ampere. Regulator itself will increase in voltage approximately 250 per cent with 10 per cent change in current through it. This regulation is obtained by use of iron filament hermetically sealed in hydrogen atmosphere. Standard two-contact auto base is standard. Made by **The Amperite Co.**, Dept. NE, 561 Broadway, New York 12, N.Y.

▲ Mention Item NED-1424 when writing ▲

PORTABLE TENSILE TESTER



Completely portable, this tensile testing machine can be furnished with interchangeable indicators for ranges of 0-250 to 0-10,000 pounds. For majority of tensile, compression, transverse or shearing tests, it will obtain required control data quickly. Brazed joints, spot welds, standard rounds or flats, cloth, hardware, porcelain, springs, plastics and many other parts or materials can be analyzed rapidly for relative strength.

Holder designed for standard V-wedge serrated grips permits rapid specimen insertion and removal by sliding outer holder supports. Though hand driven, machine may be motorized easily. It can be furnished with metal floor cabinet containing specimen cabinet and shelf for motor drive. Made by **W. C. Dillon & Co.**, Dept. NED, 5410 W. Harrison St., Chicago 44, Ill.

▲ Mention Item NED-1425 when writing ▲

MAKE THE CONTAINER PART OF THE PRODUCT

FOR assurance of safe arrival for your shipments . . . use "a container that's part of the product." The General Wirebound is just that. It is built to fit your particular needs. It combines light weight with ample strength . . . facilitates rapid packing and quick, easy handling. Saves as much as 50% tare weight. Assembly is simple, as the General Wirebound comes two-thirds assembled. Get set today for your postwar shipping . . . write for further details.

GENERAL BOX COMPANY

General Offices: Corner of Dearborn and Illinois Streets, Chicago, Illinois. District Offices and Plants: Brooklyn, Cincinnati, Detroit, E. St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon. Continental Box Company, Inc.: Houston, Dallas.

▲ Mention Item NED-1426 when writing ▲

KEUFFEL & ESSER CO.
EST. 1867
CHICAGO · NEW YORK · HOBOKEN, N. J. · ST. LOUIS
SAN FRANCISCO · LOS ANGELES · DETROIT · MONTREAL

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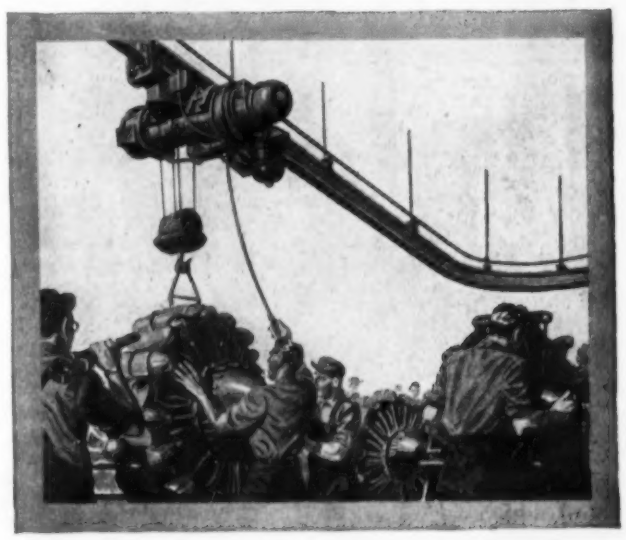
HERE IS AN ANSWER TO

The Long-Hours Slump



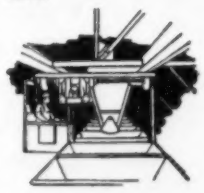
PHYSICAL fatigue slows production, spoils work and causes disruptive accidents. Anything that takes fatigue out of job handling helps to keep output rolling to the very end of each day.

That is why hundreds of important war plants have installed Louden handling systems. Motion studies show *handling* to be up to 90% of every production operation and when the bulk of handling is taken from men and given to Louden, production takes a jump, rejects are cut, morale improves and work attendance becomes far more regular.

Louden equipment handles anything from 10 pounds to 10 tons, takes materials from boxcars, flatcars and trucks, brings them to storage and stockrooms, supplies materials and parts to waiting machines, handles units in assembly and processing, through completion and out the shipping door. Not only do men work faster but three out of five men are often released for productive duties and women workers can take over with equal efficiency.

Louden systems use the ceiling, get handling out of the way of production, permit passageways to be filled with production equipment. Vitally important in war, they are economical and profitable in peacetime. Investigate Louden overhead handling today. Write for the free handling manual. The Louden Machinery Company, 543 W. Superior Avenue, Fairfield, Iowa.

Universal System of Handling
A wide range of track sizes, switches, transfers, etc., hand and power driven hoists, cranes, cab-operated hoists and cranes, make Louden systems tailored-to-need whether they serve entire factories or solve a single production bottle neck.



Answers to 3 Questions
1. Louden equipment can be installed while work goes on. 2. Louden systems serve every need from single rooms up to huge factories. 3. Standardized construction makes reasonable deliveries possible.

Free Manual
64 pages of facts, photographs, applications, savings, accelerated production and simplified handling. Write for copy today.

LOUDEN OVERHEAD MATERIAL HANDLING SYSTEMS
Untangle Men, Machines, Manufacturing and Material Handling

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Chicago Rivet AND MACHINE CO.
9606 W. JACKSON BLVD., BELLWOOD, ILL. (Chicago Suburb)
TUBULAR AND SPLIT RIVETS IN ALL RIVET METALS

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BY UDYLITE

Udylite's years of experience with this practical, inexpensive, protective coating is yours for the asking.

We have the process, nationally known for its efficiency and performance; the equipment, for both plating and dichromating; and the supplies, from chemicals to the efficient ball anode which is an exclusive Udylite development.

The above automatic dichromating machine is a Udylite development for the processing of large quantities of small parts through the complete cycle, from initial rinse to ultimate heat treat. The machine is capable of handling approximately 10 cu. ft. of volume per hour, with excellent uniformity and a minimum of scarring.

Investigate "Zinc by Udylite"—your inquiry will receive our prompt attention.

THE UDYLITE CORPORATION
1651 E. Grand Blvd., Detroit 11, Mich.
Chicago 12, 1940 Walnut Street · Long Island City 1, N. Y., 11-16 44th Drive · Cleveland 3, 4408 Carnegie Ave.

▲ Mention Item NED-1431 when writing ▲

CORROSION RESISTANT MOTOR

Suitable for operation in atmospheres containing injurious dusts, corrosive vapors, gases and excessive moisture such as are encountered often in chemical plants, textile mills, food plants and mines, Sealedpower motor is available in sizes from 1 to 15 horsepower. It can be furnished for operation on any polyphase power supply.

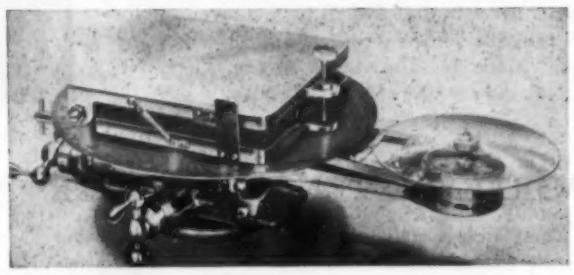
Motor is of totally enclosed, fan cooled type. Design departs, however, from previous models in that there are no cooling ducts to become fouled with wet or sticky dusts. All exposed parts are acid and alkaline resistant to high degree. In addition to mechanical sealing of entire motor, each coil is individually sealed against moisture, fumes, vapor and dust by vacuum impregnation process.

In laboratory tests, motor was operated on intermittant cycle while drenched in water for 48 hours without failure. In second test, fine chalk was introduced into test chamber for several hours without penetration into motor. Made by The Crocker-Wheeler Electric Mfg. Co., Ampere, N. J.

▲ Mention Item NED-1432 when writing ▲

QUARTZ CUTTING TABLE

Adaptable to any quartz cutting saw, this quartz orientation replacement table is used in positioning quartz to facilitate extreme accuracy in cutting crystals used in radio, radar,



sound detecting, locating and other electronic devices. It is used particularly in manufacture of crystal oscillators, and eliminates costly trial and error methods sometimes used.

Correction reading may be transferred directly from X-ray machines to 10½-inch degree dial on table. Minute calibrations on adjustments are visible easily and large enough to permit corrections quickly.

Table can be rotated 360 degrees and provisions are made for X correction with plainly visible and conveniently located scale and pointer. Table and mechanism are of chromium plated cast bronze. Adjustments are provided to compensate automatically for all wear. Spring loaded gears in gear train eliminate back-lash. Gears on sector arm and in gear train are meshed under constantly maintained tension to eliminate any inaccuracies due to tooth wear. Gear case is protected by Lucite cover to prevent quartz loaded coolant from entering.

Table can be anchored in position on saw table. Simple cross adjustments provide for horizontal positioning. Screw and scale provide for tilt adjusting of top plate. Made by Robert H. Clark Co., 9330 Santa Monica Blvd., Beverly Hills, Calif.

▲ Mention Item NED-1433 when writing ▲

HOOKS THAT REALLY TAKE *Care* OF THE LOAD

HORIZONTAL PLATE HOOKS may be used in sets of either two or four. Will handle one or more plates at each lift. They are time and labor savers for fast loading or unloading when plates are to be stacked in the flat position.

DOWNS RAIL TONGS built for safe and economical handling of railroad rails of all sizes and weights. Two-ton capacity with jaw openings of 3" for rails up to 100 lbs. ASCE. Three-ton capacity with jaw openings of 4½" for the heaviest rails.

SAFETY PLATE GRIPS with either rigid or loose guide loops will hold with a positive grip in all positions. Used for handling vertical plates, they are also safe for upending or turning over horizontal plates or assemblies. Write for illustrated catalog.

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. Vernon Ave., Los Angeles 37, Calif.

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BENEFIT FROM B·O·T·H KINDS OF UNIFORM TEMPERATURE IN STA-WARM HEATING TANKS

There are two kinds of uniform temperature required for satisfactorily heating compounds. You want and need both kinds in every heating tank or kettle in your plant.

One is uniform heat *at all times*. Sta-Warm's accurate thermostats readily give you this essential uniformity.

The other is uniform heat *in all parts* of the tank at the same time. The broad coverage of Sta-Warm heating units on all sides as well as bottom of tank wall areas guarantee this equally essential kind of uniformity. There are no "hot spots", no "cold spots" in Sta-Warm tanks, kettles or pots.

So, think of Sta-Warm when you think of heating compounds, wax, solder, glue, pitch or resins.

Inquire today, stating your requirements.

STA-WARM ELECTRIC CO.
130 N. CHESTNUT ST. • RAVENNA, OHIO

▲ Mention Item NED-1435 when writing ▲

Have You A Lime Scale or Rust Removal Problem?

PRACTICALLY every plant or mill has some type of steam-jacketed, water-circulating or water-cooled equipment. Consequently, you know how important it is to prevent lime scale and rust from building up and impairing the heat transfer efficiency of such equipment.

To remove these insulating deposits, Oakite Compound No. 32 provides a much SAFER method than the use of raw commercial acids, both from a handling and personnel standpoint. Because of its highly effective scale-dissolving properties, it quickly gets rid of accumulations that impede heat transfer and restores unit to practically normal operation efficiency.

28-PAGE MANUAL FREE

This helpful manual contains just the information you need to solve your lime scale and rust problems EASILY, QUICKLY and ECONOMICALLY. Write for your FREE copy TODAY.

OAKITE PRODUCTS, INC., 32G THAMES ST., NEW YORK 6, N. Y.
Technical Service Representatives in All Principal Cities of the United States and Canada

OAKITE Buy Bonds for Victory CLEANING
MATERIALS · METHODS · SERVICE — FOR EVERY CLEANING REQUIREMENT

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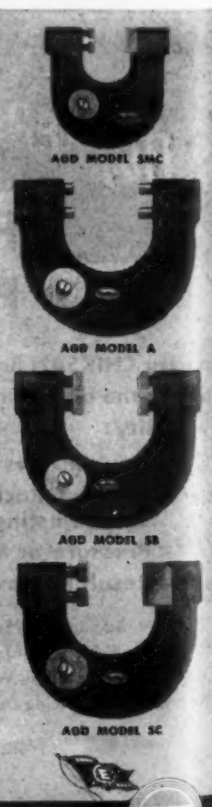
WE CAN SHIP TODAY

You can get immediate shipment from a complete stock of all models and all sizes of A.G.D. Adjustable Snap Gages.

HOW TO ORDER

State Frame Model and Frame Size. Stipulate whether gage is to be set and sealed. Give complete marking instructions if set and sealed. For specifications see Sheffield Handbook No. 42-2, pages 150-153.



THE SHEFFIELD CORPORATION
Dayton 1, Ohio, U.S.A.
MACHINE TOOLS · GAGES · MEASURING INSTRUMENTS · CONTRACT SERVICES

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Courtesy The Belmont Casket Manufacturing Company, Columbus, Ohio.

NOT A SINGLE LEAK

After examining this troublesome job of producing a watertight seal for the lids of these metal field ammunition boxes, our man recommended the particular machine and the use of our Speed-wet Durite Cloth Belts (waterproof).

Result: **100% LEAKPROOF**
100% FASTER OUTPUT

We'll be glad to survey all your sanding operations and make practical suggestions for similar savings. Simply get in touch with

We can't benefit unless YOU *do.*

BEHR-MANNING
(DIVISION OF NORTON COMPANY)
TROY, N. Y.

▲ Mention Item NED-1438 when writing ▲

TILTING WIRE REEL

Designed to ease operation of manually loading wire reels, this Powertilt wire reel is so constructed that women workers can load 250-pound coil of wire without assistance. Motor drive does hard work of elevating coil from floor up to working level. Turn of control lever causes motor to start and elevate loaded reel automatically. Motor stops when reel reaches upright position. Slight push against coil centers it and drop center is locked by throwing over U-shaped bar.

Drop center of unit eliminates need for lifting coil from floor during loading. Coil is merely rolled into position and tipped onto reel core. Safety of operator is assured at all times. In lowering reel to loading position, operator turns control handle. Motor shuts off automatically when in lowered position.

Power is furnished by standard NEMA 1/3-horsepower motor through V-belt drive to main gears which are enclosed in transmission and mounted in ball bearings. Reels are available to handle coils weighing up to 250 pounds with 18-inch minimum inside diameter, 36-inch maximum outside diameter and up to 12 inches wide. Made by F. J. Littell Machine Co., 4161 Ravenswood Ave., Chicago, Ill.

▲ Mention Item NED-1441 when writing ▲

AIR FILTER

Permitting use of larger number of filter lines for serving air tool operations at single point, this controlled compressed air filter has total of six outlets in manifold and self-dumping trap which automatically empties water filtered out of lines. This model augments two and three-way filters which company has had on market for some time.

Outlets are ⅜-inch to accommodate snap-on hose connections. Closed float guarantees positive opening and closing of discharge valve. Interior parts are heavily plated to reduce rusting to minimum. Trap is easily serviced. Self-dumping trap is standard equipment on all CCA filters having 1-inch or larger pipe connections. Smaller filters may be equipped with water trap if orders include this specification. Filter prevents dust, rust scale, oil, and water from entering valuable air tools; prolongs life and increases efficiency of pneumatic equipment. Orders can be filled immediately from stock. Made by **Filters, Inc.**, Dept. N, P. O. Box 471, Glendale, Calif.

▲ Mention Item NED-1442 when writing ▲

TRY THIS FOR 10 SECONDS

Try to hold two pencils in perfect end-to-end alignment without touching each other while you count 10. That will show you why flexible couplings are necessary to absorb unavoidable misalignment between shafts of direct-connected machines.

Ajax rubber bushed, graphited-bronze bearings with interlocking studs provide positive, resilient drive. No backlash, no noise, no lubrication problem.

AJAX FLEXIBLE COUPLING CO.
WESTFIELD, N. Y.
Incorporated 1920

▲ Mention Item NED-1439 when writing ▲

STRUTHERS-DUNN
INCORPORATED

5,288 TYPES OF RELAYS

Each available in countless coil combinations

1321 ARCH STREET, PHILADELPHIA 7, PA.

DISTRICT ENGINEERING OFFICES: ATLANTA • BALTIMORE • BOSTON • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DENVER • DETROIT • HARTFORD • INDIANAPOLIS • LOS ANGELES • MINNEAPOLIS • MONTREAL • NEW YORK • PITTSBURGH • ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO • WASHINGTON

▲ Mention Item NED-1440 when writing ▲

'The
PUMP VALVE WITH 1000 SEATS

Royal Crown PUMP VALVE is a ball-guided spherical valve that revolves, swings, and takes a new seat at each stroke of the pump—has 1000 seats for longer wear and greater efficiency. Machined to a true balance . . . light and buoyant . . . only three trouble-free parts . . . no springs, clips or keys. Extreme temperatures or pressures cannot reduce its efficiency. A wide range of sizes in any alloy metal for either thread- or press-fit.

Write for Catalog!

MADSEN IRON WORKS
HUNTINGTON PARK, CALIFORNIA

Royal Crown
PUMP VALVES

▲ Mention Item NED-1443 when writing ▲

SPEEDY AIR VISE

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

• Speedy Air Vise helps workers get out more and better work—in less time! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce. Operates from air line or individual compressor, exerting a grip of 15 times air line pressure. Jaw opens up to 3 inches, easily fitted to hold castings, parts, jigs, etc. Speeds up every drilling, light milling, tapping and assembly operation. Compact, sturdy, trouble-free, low in cost! ••••• *Speedy Air Vise, complete with Foot Control Valve, Air Hose and Fittings, only* **$24**

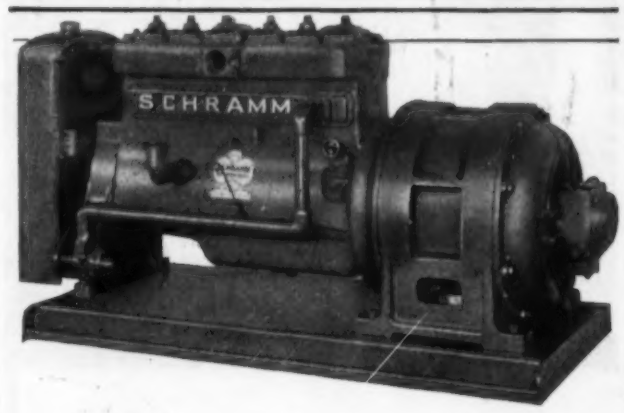
Prompt Delivery from Your Supplier or Write Direct.

W. R. BROWN CORPORATION
5716 Armitage Avenue • Chicago 39, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

▲ Mention Item NED-1444 when writing ▲

Why SCHRAMM COMPRESSORS are Water Cooled!



The basic system of any cooling system is simply to remove heat of piston travel and reciprocating parts from the surrounding metal as quickly as possible by the cooling medium. Heat travels from metal to water 200 times faster than from metal to air. By using water to carry heat away and by providing water jackets which completely surround compressor cylinders and heads, SCHRAMM achieves the following outstanding advantages:

...assured uniformity in cooling.

...elimination of unequal expansion and contraction which might cause distortion.

...absolute control of operating temperatures to the desired degree.

...longer life to compressor parts.

...higher efficiency of compressive cycle.

...higher compressor capacity at lower power cost.

...greater capacity in smaller overall space requirements.

...ability to provide compressed air efficiently under any and all temperature conditions.

...ability to provide compressed "air where it's needed," regardless of the amount of water available for cooling. SCHRAMM compressors are built in types equipped for re-cooling water (as well as for running water).

Get all the facts . . . **NOW!**

Write at once for complete details. Send for Catalog No. 42-S.

SCHRAMM, INC., WEST CHESTER, PA.
THE COMPRESSOR PEOPLE

SCHRAMM Air Compressors

▲ Mention Item NED-1445 when writing ▲

MAKE STRONGHOLD SCREW PRODUCTS

A PART OF YOUR POSTWAR PLANNING NOW!

PROTECT *yourself against delays in delivery* by placing your post-war requirements with us now for preferred handling when restrictions have been removed or relaxed. No priority is required. Such orders are being accepted subject to current prices when definite delivery dates can be set.

By ordering now you will be assured of prompt deliveries while others are still in the "blueprint" stage.

For your own protection — make "STRONGHOLD" a part of your post-war planning NOW!

A new STRONGHOLD catalog is in production. Is your name on our mailing list?

Manufacturers Screw Products
218 West Hubbard St. Chicago 10, Ill.

▲ Mention Item NED-1446 when writing ▲

Copperspun ROTOR

A Challenge to the Future In Perfect Motor Design

Here is the new Fairbanks-Morse general purpose, continuous duty motor—designed for the future—available now! Never have more stamina, versatility, and protection been built into a motor housing!

NOTE THESE FEATURES

- It is a 40° C. Motor.
- It is a protected motor.
- It has an optional conduit box assembly.
- It has cross-flow ventilation.
- It has ball bearings—sealed in cartridge type closures.
- It has exclusive Fairbanks-Morse *COPPERSPUN ROTOR.*

BUY WAR BONDS

This new motor must be seen to be appreciated. Write Fairbanks, Morse & Co., 270 Fairbanks-Morse Building, Chicago 5, Illinois.

FAIRBANKS-MORSE
DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · WATER SYSTEMS · SCALES · STOKERS · FARM EQUIPMENT · RAILROAD EQUIPMENT
Motors

▲ Mention Item NED-1447 when writing ▲

ROOF VENTILATING UNIT

Providing controlled ventilation with low installation and operating costs, this Wolverine roof fan is available in thirteen sizes ranging in capacity from 5650 to 45,275 cubic feet of air per minute free delivery. It may be used in new construction or to replace old style penthouse with louvers. It is adaptable to all roof types and is easily fastened over roof opening.

Propeller type fan of 12 to 20 blades, depending upon size, is V-belt driven by ball bearing motor. Fan wheel is also mounted on double row ball bearings. Unit is insulated against loss of heated air in winter or conditioned air in summer. Damper and duct turn in single unit to assure positive opening action when power is on and positive closing when power is off. Unit is easily serviced. Made by **Belanger Fan & Blower Co.**, 1234 Eighteenth St., Detroit 16, Mich.

▲ Mention Item NED-1448 when writing ▲

BUSHING CEMENT

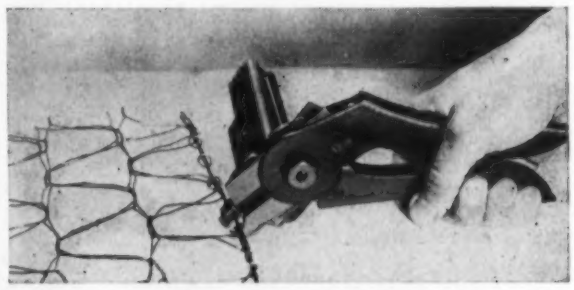
Although originally designed to cement transformer leads into porcelain bushings, No. 16-A bushing cement is also adaptable for use as permanent sealer for cable joints, instruments and other applications. This black compound has excellent adhesion to metal and porcelain, in addition to having very low coefficient of contraction. It becomes extremely hard and will withstand strain of rapid temperature changes. Being both oil and waterproof, it will prevent leakage and seepage.

Cement is homogeneous and retains uniformity during melting, thereby eliminating possibility of caking during melting process. Melting point is 265 degrees Fahr. and pouring temperature is 400 degrees Fahr. Made by **John C. Dolph Co.**, Dept. 37, 168 Emmett St., Newark 5, N.J.

▲ Mention Item NED-1449 when writing ▲

STAPLING PLIER

Wrapping staple around work in much same manner as conventional hog-ring plier but many times as fast, this magazine-fed stapling plier is now available in limited numbers



to civilian industries engaged in important production. It was orginally developed for armed forces for attaching strips of wire netting and fence wires. Tool applies 60 to 70 rings with one loading. Narrow jaws enable it to get into small spaces. Rapid, one hand operation speeds work. Weight is less than 2 pounds. Ring diameter is ¼ inch; ring overlap, ¼ inch; wire size, No. 16. Made by **Bostitch**, 143 Division St., East Greenwich, R. I.

▲ Mention Item NED-1450 when writing ▲

NEW IMPROVED MONARCH UNI-POINT RADIAL SAW

VITAL PARTS OF HARDENED STEEL INSURING PERMANENT ACCURACY

Here you see the MONARCH UNI-POINT RADIAL SAW with ram housing cut away to show hardened steel ram riding on 32 oversize precision ground hardened steel roller bearings on hardened steel bearing ways — nothing to wear out. Saw table and base not shown.

Increase your production and enjoy greater accuracy and safety with UNI-POINT—saw blade always entering lumber at same point regardless of cross cut angle. Accessories are available for use with this machine to accommodate all common and many complicated woodworking production cuts—even scarfing, notch cutting, and dapping. Send for Catalog NE-12.

Send for Catalog No. NE-12

AMERICAN SAW MILL MACHINERY CO.
115 Main St. Hackettstown, N. J. Established 1903
Radial Saws · Band Saws · Planers
Saw Benches · Jointers · Lathes

▲ Mention Item NED-1451 when writing ▲

NEW INDUSTRIAL TRUCK Speeds Material Handling!

★ Do away with obstructing heaps of parts and other materials . . . keep the aisles clear and reduce handling by equipping with Acro Industrial Trucks.

Made of highest grade kiln-dried oak, equipped with 5" heavy-duty casters—2 swivel and 2 stationary—these multi-purpose trucks will handle heaviest loads and may be easily pushed by one man.

Standard units are 28" wide, 42" long, 34" high, and are built to withstand most punishing abuse. Order today!

See your Jobber or Write Direct!

ACRO TOOL AND DIE WORKS
4892 N. Clark St. • Longbeach 1887 • Chicago 40, Ill.
TOOLS • DIES • WOOD and METAL SPECIALTIES

▲ Mention Item NED-1452 when writing ▲

NEW EQUIPMENT TO BOOST PRESENT POWER!

L-R Non-Lubricated

FLEXIBLE COUPLINGS

Correct misalignment, absorb shock and vibration, relieve motors of many troubles that *originate in transmission.* L-R Couplings non-lubricated, practically service-free.

L-R TYPE "IA"

In universal use for light duties. 1/6 to 50 h.p. Only 3 parts—2 metal bodies and resilient spider.

Pat. & Pats. Pend.

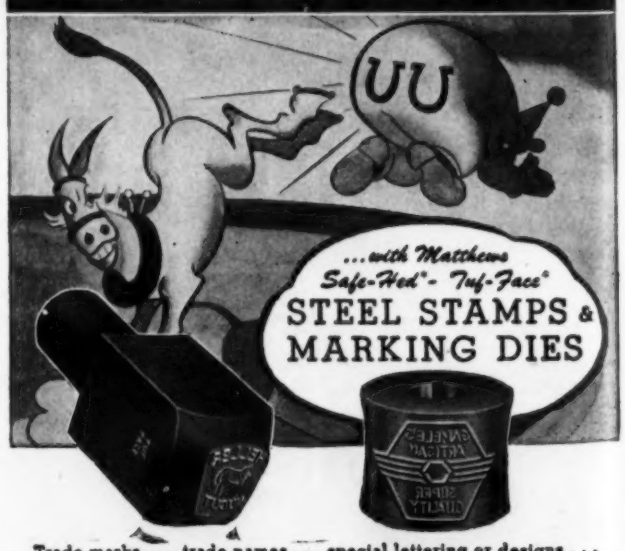
Send for Complete Catalog

Free Selector Charts for quick-finding of right couplings any duty to 2500 h.p. Wire or write

LOVEJOY FLEXIBLE COUPLING CO.
4958 WEST LAKE ST. • CHICAGO 44, ILL.

▲ Mention Item NED-1453 when writing ▲

ACCURATE REPRODUCTION



Trade marks . . . trade names . . . special lettering or designs . . . accurately reproduced in Matthews dies and stamps . . . for marking all types of industrial products. Stamps and dies furnished for hand stamping, or for use in presses or marking machines.

*REG. U.S. PAT. OFF.

Write for Catalogs 146-A and 146-B

JAS. H. MATTHEWS & CO.
3943 Forbes Street Pittsburgh 13 Pa.
Branch Plants
New York, Boston, Chicago, Philadelphia, Newark, Syracuse
District Sales Offices
Cleveland · Detroit · Hartford · Birmingham

▲ Mention Item NED-1454 when writing ▲

A New Method for Keeping Water and Oil out of COMPRESSED AIR LINES

● Compressed air cooled to lower temperatures takes out the "grief" of freezing air lines, water hammer, rapid wearing out of pneumatic tools or equipment, damage to sprayed coatings, and spoilage of products in which compressed air is used in process.

NIAGARA AERO AFTER-COOLER produces compressed air with one-half the moisture permitted by ordinary methods and provides controlled uniform air temperatures. Also, it controls jacket-water temperature and prevents the washing of oil out of the compressor cylinder, damaging the compressor and fouling the air lines.

It accomplishes these results with great savings of cooling water cost. For complete information, address: ED-34

NIAGARA BLOWER COMPANY

25 Years of Service in Air Engineering

New York Address:
6 E. 45th St., New York 17, N. Y.

Field Engineering Offices in Principal Cities

▲ Mention Item NED-1455 when writing ▲

SIX MONTHS' TEST PROVES

Boots Nuts Eliminate Periodic Tightening

"The sample Boots Nuts which you supplied have now been in use on several of our vehicles, both light and heavy, for a period of six months.
We selected two difficult spots for their application, drive shaft universal joint flanges and chassis spring U-bolts. At these points plain nuts are not satisfactory unless a lock washer or jamb nut is used to hold them. Even so, they require periodic tightening. The Boots Nuts in use have not required any attention since they were installed."
Signed,
United Parcel Service

A portion of the 2900-truck fleet of United Parcel Service trucks serving 16 metropolitan cities.

THIS report of a test made by the country's outstanding consolidated delivery company, operating in sixteen cities, is a clear-cut indication of the economies that Boots All-Metal, Self-Locking Nuts will effect in the transportation field after victory.

One piece, all-metal, Boots withstand the corrosive action of oil, water and chemicals. There's nothing to dry out, crack or shrink. Also, Boots Self-Locking Nuts can be used over and over without accelerated locking loss.

The ALL-METAL lock is built in here

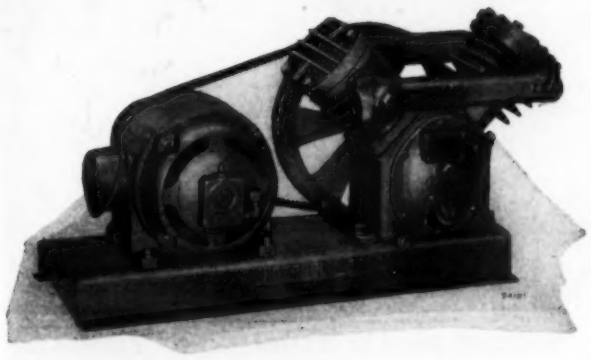
ROL-TOP. This style nut, now used on all types of aircraft engines, is the type of Boots All-Metal, Self-Locking Nut mentioned in the above letter.

BOOTS SELF-LOCKING NUTS
"There's No Excuse for a Nut Shaking Loose"

Boots Aircraft Nut Corporation • General Offices, New Canaan, Conn.

▲ Mention Item NED-1456 when writing ▲

VACUUM PUMPS



● Ingersoll-Rand Type 30 vacuum pumps are small, compact units suitable for any dry vacuum service. They are vertical, single-acting, air-cooled machines of the single- and two-stage types. Available in capacities from 9 to 100 cfm. for vacuums up to 29" hg.

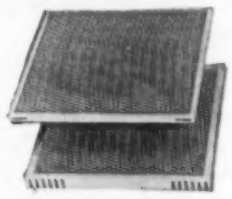
Larger reciprocating vacuum pumps for capacities up to 8400 cfm., as well as a complete line of steam-jet vacuum pumps are also manufactured by the Company.

Ingersoll-Rand
11 BROADWAY, NEW YORK CITY

▲ Mention Item NED-1457 when writing ▲

CLEANABLE AIR FILTERS

Having expanded metal filter mesh design which results in high efficiency and low initial resistance, Permo-Aire and Badger filters are of impingement type. Filters can be removed, cleaned and recharged in minimum of time. Vents in frame aid in quick cleaning and thorough draining.



Badger filter is available in 1 and 2-inch thicknesses and in sizes ranging from 100 to 600 square inches. It is designed especially for ventilation and air conditioning service, as well as other purposes where efficiency, large dust holding capacity and low static pressures are required. Arc welded frames can be provided with handles if necessary. Filters are fireproof.

Permo-Aire filters for extra heavy duty and industrial air cleaning services are supplied in 2 and 4-inch thicknesses with areas ranging from 100 to 1200 square inches. Filtering efficiency of as high as 98.5 per cent is claimed.

Permo-Aire grease filters for kitchen and galley ventilation remove kitchen fumes, avoid danger of grease fires, protect mechanical equipment and insure sanitation. Filter holding frames with Slip-Groove assembly and spring locking features are available in many standard sizes and shapes for applications requiring large filtering capacity in minimum of space. Made by **Air Devices, Inc.**, Dept. D, 17 E. Forty-second St., New York 17, N. Y.

▲ Mention Item NED-1458 when writing ▲

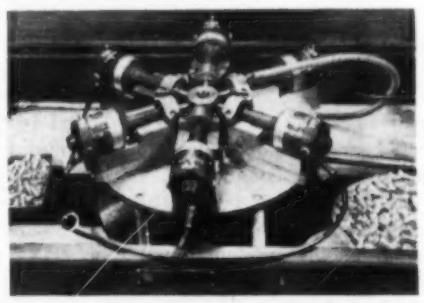
RESIN INKING ROLLERS

Rollers of Lucite methyl methacrylate resin are replacing rubber ink distributing rollers used in off-set presses and duplicators. These rollers are durable and operate successfully in place of worn or scarred hard-to-replace rubber rollers. Precision machining and grinding method assures accurate dimensions required for proper performance.

Lucite, being clear transparent plastic, assures complete cleaning by operator. Plastic rollers may be used with "clean-up" attachments which are standard equipment on some duplicators. Rollers made by Lumirol Co., New York. Lucite made by **E. I. du Pont de Nemours & Co.**, Wilmington 98, Del.

▲ Mention Item NED-1459 when writing ▲

BOLT HEAD DRILLER



Bolt head drilling machine shown is mounted on regular stock wash tank instead of on special tank, eliminating time and expense. Six lock wire holes are drilled simultaneously in aircraft pump screw having ⅝-inch hex head at production rates of up to 300 pieces per hour. Work is placed by hand in holder. Turn of lever moves six drilling heads in to drill holes. Simple movement releases part for removal. Made by **Zagar Tool, Inc.**, 23880 Lakeland Blvd., Cleveland 17, O.

▲ Mention Item NED-1460 when writing ▲

Oxweld
Oxy-Acetylene Apparatus

Oxweld apparatus includes blowpipes, attachments, regulators, manifolds, cutting machines, acetylene generators, and related equipment from which you can select exactly the items needed for any application of the oxy-acetylene process. An Oxweld outfit assembled for general purpose welding and intermittent light cutting is illustrated above.

Send for catalogs describing Oxweld apparatus, specifying the types of equipment in which you are interested.

"Oxweld" is a registered trade-mark.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
30 East 42nd St. UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

▲ Mention Item NED-1461 when writing ▲

Behind the Scene of Action

The PALMER Thermometer works silently, without glamour, because it was built for long service, guaranteed accuracy and to be easy to read.

When battles are fought above deck, the engineers continue their scheduled tasks, obeying orders side by side with high powered Diesel Engines and the Thermometers and instruments upon which they rely.

When Victory comes again, give the Instruments and the Men equal credit for a job well done. In Peace Time, these same Thermometers will give you . . .

LONG LASTING SERVICE
GUARANTEED ACCURACY
RED-READING-MERCURY
(So Easy to Read)

THE PALMER COMPANY, Mfrs.
INDUSTRIAL, LABORATORY, DIAL & RECORDING THERMOMETERS
2523 Norwood Ave., Cincinnati, Norwood, O.
Canadian Plant: King & George Sts., Toronto

▲ Mention Item NED-1462 when writing ▲

PALMGREN ANGLE VISES

DRILLING
MILLING
GRINDING
FILING
FITTING
MARKING

Solve Difficult Angle Jobs

★ For Tool Room — Production Line — Bench.
★ Speed up work — End Makeshift Methods.
★ Quick Accurate Setups at any angle.
★ Sturdy Longlife Construction.
★ All Parts Accurately Machined.
★ Jaws Hardened Steel — Plain or Grooved.
★ Made in Sizes from 1½" to 8" Jaws.

Write for circular H-3 "101 Angle Operations" and complete line of PALMGREN Vises.

CHICAGO TOOL & ENGINEERING COMPANY
Mfrs. of PALMGREN PRODUCTS for over 25 years
8378 South Chicago Avenue, Chicago, Ill.

PRECISION WORK AT ANY ANGLE

▲ Mention Item NED-1463 when writing ▲

TRANSPORTS AND PILES THEM HIGH

Large loads are handled speedily and without concern for aisle clearance or floor conditions with this motor-driven tote box grab and Cleveland Tramrail overhead rail system. Boxes are picked up, delivered and stacked by the cab operator, alone, with controls in the cab.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information . . .

CLEVELAND TRAMRAIL ENGINEERING AND APPLICATION DATA BOOK 2008

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
1143 East 283rd St Wickliffe, Ohio

CLEVELAND TRAMRAIL

▲ Mention Item NED-1464 when writing ▲

WALLACE No. 1 RADIAL SAW

ALL-PURPOSE SAW for WOOD AND METAL

•

For cut-off, miter and rip work on Wood, Duralumin, Brass, Bronze, Steel, Glass and other refractory materials.

In the crating department, for plant maintenance work, for production sawing and cutting operations on wood, duralumin, metals, etc. the Wallace No. 1 Radial Saw is unexcelled. Material lays flat on table,—motor is moved back and forth in arm for cutting. Arm, column and motor all rotate 360° and can be set at any angle position for cutting. Motors to 2 H.P. Used with saw blades or $\frac{1}{32}$" thick abrasive wheels. Write for bulletins on this cost-saving machine *today*.

J. D. WALLACE & COMPANY
145 S. California Ave. Chicago, Illinois

▲ Mention Item NED-1466 when writing ▲

DESIGN ENGINEERS

CAN YOU USE A RESISTANCE MATERIAL in which *I varies as E⁴*?

Thyrite may be the answer to some of your circuit problems. It is a silicon-carbide ceramic material, dense and mechanically strong, having nonlinear resistance characteristics—the resistance varying as a power of the applied voltage. Its resistance characteristic is stable, and substantially independent of polarity or frequency. Thyrite* has been used for many years in important applications, including electronic. It can be produced in various shapes and sizes (those which can be successfully molded).

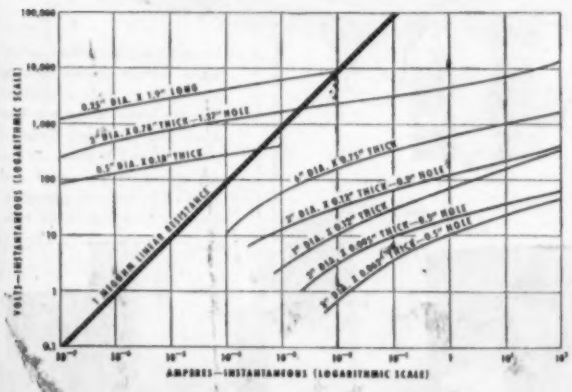
Some of its MANY APPLICATIONS

For protective purposes (to limit voltage surges).

As a stabilizing influence on circuits supplied by rectifiers.

As a potentiometer. (The division of voltage can be made substantially independent of load current.)

For the control of voltage-selective circuits, either independent of or in combination with electronic devices.



Typical volt-ampere characteristics of Thyrite resistors of several resistance levels and power ratings. Note that the nonlinear voltage-current characteristic extends over an extremely wide current range. Compare it with the characteristic (heavy line) of a 1-megohm linear resistor.

The nearest G-E office can tell you what data to supply as a basis for a quotation, or write to General Electric, Section 16-250, Pittsfield, Mass.

*Reg. U.S. Pat. Off.

GENERAL ELECTRIC

▲ Mention Item NED-1467 when writing ▲

DIAL INDICATOR SNAP GAGE

Filling important gap between conventional snap gage and high precision visual gage, this line of dial indicator snap gages includes twelve models, covering range up to 12 inches, with larger sizes supplied to customer's specifications. This device is particularly useful in checking work which is being brought down to size. Being as portable as conventional snap gage, operator can make comparator type of check without removing work from machine. It is also used for inspecting finished parts at bench and for classifying parts of such size and weight that they cannot be checked with other types of comparators.

Illustrated tool has large shockproof dial indicator which is graduated in 0.0001 inch. It is of balance type, plus and minus 0.005 inch and range per revolution of hand is 0.010 inch. When properly set, hand will make one and one-quarter revolutions in either direction, providing total range of 0.025 inch.

Anvils are lapped to gagemaker's tolerance. Adjustable anvil has maximum range of 1 inch. Gage frame is light in weight, yet is rigid and free from stresses. Serrated plastic grips on each side of frame facilitate its use and insulate gage against temperature of operator's hands. Made by **The Sheffield Corp.**, 1530 E. Third St., Dayton 1, O.

▲ Mention Item NED-1468 when writing ▲

COUNTING SCALE

Extra sensitivity is provided in this scale which is designed for quick and accurate counting of very small parts of uniform weight. Indicator travel per pound is nearly three times that of usual counting scale of this size. Small parts weighing as little as 3/64 ounce cause preceptible movement of indicator. No ratio charts or tables need be used.

Chart has zero graduation in center, with work "Over" to right and "Under" to left. Model shown is equipped with two 10-pound scale beams graduated in ounces. With these two beams, it can be used for weighing up to 20 pound loads in addition to counting. Counting capacity is 25 pounds.

Ratio-counting combinations include 99:1-9:1, which is particularly adapted to counting unknown number of parts or to issuing predetermined number of parts. The 100:1-10:1 ratio is especially suited to repeated issuing of same number of parts. The 72:1-12:1 ratio is designed for issuing predetermined number of parts in gross lots or predetermined number of dozens. In latter two, parts in two smaller scoops are not counted and may be left in pans for repetition of operation. Made by **Toledo Scale Co.**, P. O. Box 97, West Toledo Station, Toledo, O.

▲ Mention Item NED-1469 when writing ▲

RUBBER CUSHIONED COUNTERSHAFT AND THREE-POINT SUSPENSION

Brief SPECIFICATIONS

★

Swing over bed, 10½" . . . bed length, 43⅛" . . . spindle hole, 25/32" . . . capacity, ⅝" with push type collet . . . 12 spindle speeds from 30 to 1450 r.p.m. . . . moving parts protected by ball bearings or self lubricating bronze bearings.

motor vibration absorbed

Rubber cushions at three main support points of the Logan countershaft absorb the motor's vibration before it reaches the headstock. Even the cone pulley guard covering countershaft and headstock rests on rubber buttons. *At no point is there a direct metal-to-metal contact between countershaft and headstock.* Three-point suspension steadies the whole countershaft assembly so that it cannot rock. This patented countershaft is one of many features assuring sustained accuracy and longer life in Logan Lathes. Write for full catalog information.

LOGAN ENGINEERING CO.
CHICAGO 30, ILLINOIS

Logan A NAME TO REMEMBER WHEN YOU THINK OF LATHES

one of a series describing the finer features of Logan Lathes

▲ Mention Item NED-1470 when writing ▲

Coil Stock feed it faster with LITTELL AUTOMATIC CENTERING REELS

At Left—No. 3 LITTELL Automatic Centering Reel. For easy, rapid, efficient, economical handling of coiled stock. Capacity, 600 lbs. Takes coils max. width 10", max. O.D. 48", I.D. 8½" to 21". Motor-driven Reels for handling coils up to 6,000 lbs. Coil Cradles for coils up to 20,000 lbs.

KEEP your punch presses running steadily, at top speed, by using coil stock unreeled with LITTELL Ball-Bearing Automatic Centering Reels. They provide a free-flowing loop of stock and permit continuous feeding without waste.

Made in plain or motor-driven types for handling coils from 100 to 6,000 lbs. Equipped with the latest devices for feeding at desired speeds. Handle stock in various widths and thicknesses. Reel can be tilted at any angle. Adjustable in height. Vertical or horizontal operation. Coil Cradles can be provided for handling stock up to 20,000 lbs.

Besides Reels, LITTELL makes a complete line of press-room equipment, including—Roll Feeds, Feeding and Straightening Machines, and such essential safety devices as Pres-Vac Safety Feeders and Air-Blast Valves. Leading war-production plants use LITTELL.

ASK FOR BULLETIN

F. J. LITTELL MACHINE CO.
4161 RAVENSWOOD AVE., CHICAGO, ILL.

▲ Mention Item NED-1471 when writing ▲

METAL NAME PLATES IN COBALLOY

This Material Available in Large Quantities for War Work

★

COLONIAL BRASS CO.
101 VINE STREET
MIDDLEBORO, MASS.

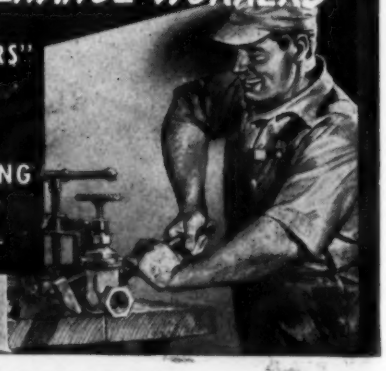
▲ Mention Item NED-1472 when writing ▲

NEW TRAINING FILM FOR MAINTENANCE WORKERS

"PIPING POINTERS"
16 mm. Sound Movie

•

NOW READY FOR FREE SHOWING IN ANY PLANT
Approx. Length, 30 Min.



TEACHES PROPER HANDLING OF VALVES, FITTINGS AND PIPE

Free use in any plant—act now to see it soon

This film makes an easier task of training new piping workers. It explains the various types of valves and fittings—tells when and where to use them for best results. It shows how to repair valves—how to handle many other maintenance problems—how to conserve time and materials.

Assure a convenient early showing of "Piping Pointers" in your plant. Get in touch with your local Crane Branch that will arrange for use of the film and provide new "Piping Pointers" Manuals that make seeing the film doubly effective. If you prefer, write direct to:

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Ill.

CRANE VALVES

▲ Mention Item NED-1473 when writing ▲

ANOTHER "WEAPON FOR PRODUCTION" *The* "MX" WHEEL

Pioneered and offered to industry exclusively by Carborundum

LESS than a year old, the "MX" Wheel is already making a name for itself as a "Weapon for Production." It is a free-cutting wheel capable of light stock removal and high polishing action at the same time. It requires but little pressure. It is used dry, since no coolant is required at the low cutting temperature developed.

Typical applications include breaking down burrs or sharp edges on gear teeth, finishing and polishing splines and hard-to-get-at flat surfaces, depressed areas and various types of undercuts.

These new wheels are made in six grades of hardness and in grits 50, 80, 120, 180 and 320. Diameters range from 1" to 12", and thicknesses from 1/16" to 3". More complete information will be sent on request.

CARBORUNDUM ABRASIVE PRODUCTS

THE CARBORUNDUM COMPANY, NIAGARA FALLS, N. Y.
REG. U. S. PAT. OFF.

Sales Offices and Warehouses in New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, Pittsburgh, Cincinnati, Grand Rapids

(Carborundum and Aloxite are registered trade-marks and MX is a trade-mark of, and indicate manufacture by The Carborundum Company)

▲ Mention Item NED-1474 when writing ▲

Super-Strong ROLLS

WOOD, METAL, RUBBER, PLASTIC

Specializing in rolls for 50 years, Rodney Hunt today makes use of new materials and applies patented features of design and construction which make rolls super-strong. Textile, paper and many other industries have ended roll troubles and cut roll costs by standardizing on "Rodney Hunt". Write for Catalog No. 740.

RODNEY HUNT MACHINE COMPANY

78 MAPLE STREET ORANGE, MASS., U. S. A.

▲ Mention Item NED-1475 when writing ▲

CLEAN UP TANK

the weapon to use against

HEAVY DIRT
DUST
GRIT

IDEAL "TANK-TYPE" ELECTRIC CLEANER

Insures Longer Life for Machines—Motors. Cuts down wear. Prevents electrical shorts. Blows low pressure high velocity dry air. Picks up not only heaviest dust and dirt, even if moist, but metal chips, grindings and other abrasive materials and traps them in 12 gal. metal tank—preventing damage to fan, housing and bag. Full 1 H.P. Motor.

DETACHABLE HAND CLEANER
Available as a separate unit.
Write for FREE Descriptive Literature

IDEAL *Sycamore*
IDEAL COMMUTATOR DRESSER CO.

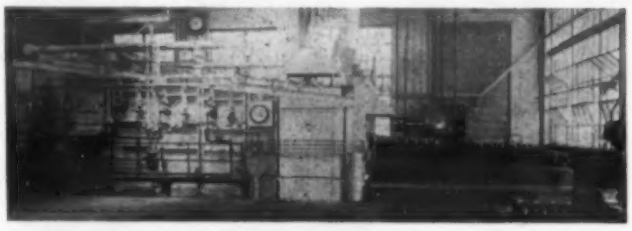
132 Park Ave. Sycamore, Ill.

Sales Offices in All Principal Cities
In Canada: Irving Smith Ltd., Montreal, Quebec

▲ Mention Item NED-1476 when writing ▲

COPPER BAR FURNACE

Continuous heating of copper wire bars to permit coordination between heating and handling rate is performed with this continuous heating furnace. It is designed to synchronize



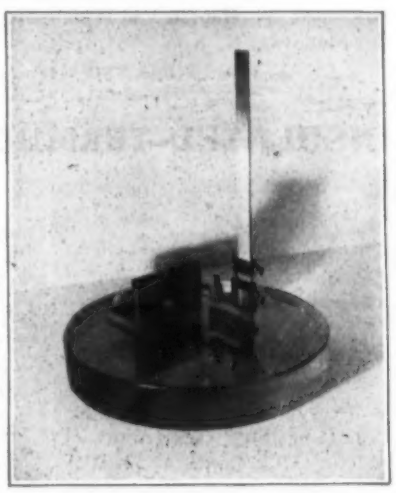
charging rate with rate of bar feed to mill. Illustrated furnace is about 22 feet long and 10 feet wide. It will handle two rows of 63 wire bars per row, each weighing 250 pounds, in heating time of 1¼ hours. Heating rate 25 per cent higher can be obtained if pushed. Production is thus approximately 25,000 pounds per hour. Fuel consumption is approximately 0.35 cubic feet of natural gas per pound.

Handling equipment consists of 20-foot charging table on which bars are placed, oil-operated pusher mechanism and two rows of water cooled skids for each row of bars. Gas burners are located on both sides of heating and soaking zones, and at discharge end. Auxiliary oil burners are installed in event of need for changeover. Automatic temperature control coordinates burner operation with flow of bars.

Skids and furnace chamber slope upward toward discharge, thereby permitting bars on discharge to slide on incline onto driven roller table, which conveys them directly into first pass of mill. Design prevents cold air infiltration and aids in better control of furnace atmosphere, producing relatively clean bars. Made by **W. S. Rockwell Co.**, 50 Church St., New York 7, N. Y.

▲ Mention Item NED-1477 when writing ▲

GLASS SURFACE PLATES



Flat to 0.00005 inch or less, Opti-Flat glass master surface plates are available in 12-inch diameters, 2 inches thick or 16-inch diameters, 3 inches thick. Optical polishing is used to obtain precision surface. Material has coefficient of expansion which is almost one-fourth that of plate glass or cast iron. If desired, highly polished wringing surfaces can be furnished, giving visible proof of millionth of an inch contact with Johansson gage block.

Features include corrosion resistant, non-magnetic structure and elimination of warpage. Scratches do not affect accuracy because there are no burrs. Also available are toolmaker's knees which are accurate to 30 seconds of angle. These are made of low coefficient of expansion glass with face sizes of 2½ x 4 and 2½ x 3 inches. Made by **Binswanger & Co.**, Precision Optics Div., 655 Union, Memphis, Tenn.

▲ Mention Item NED-1478 when writing ▲

DRIVES

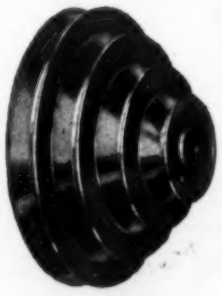
VEE-BELT
VARIABLE SPEED
FLEXIBLE COUPLING

PROMPT DELIVERY

MOTOR FLEXIBLE COUPLINGS up to 25 H. P.

VARIABLE SPEED

WRITE FOR LITERATURE



DIE CASTINGS

Send us your blueprints. Our facilities enable us to quote attractive prices and give prompt service on zinc and aluminum die castings.

FAST SERVICE

CONGRESS DIE CASTING DIVISION
CONGRESS TOOL & DIE CO.
3752 EAST OUTER DRIVE DETROIT 12, MICH.

▲ Mention Item NED-1479 when writing ▲

"HYPER-MILLING" Explained!

ASK FOR BULLETIN FE-106

Firth-Sterling STEEL COMPANY
McKeesport, Pa.

▲ Mention Item NED-1480 when writing ▲

Centralized . . . to Serve You Efficiently

LARGEST & MOST COMPLETE STOCKS OF ELECTRONIC and RADIO EQUIPMENT *Under One Roof*

Over 10,000 electronic and radio items are stocked here ready for *rush* delivery! Not only that—our procurement experts are in constant touch with all leading manufacturing sources. This complete centralized service simplifies and expedites procurement of *Everything in Electronics and Radio.* To save time and work . . . CALL ALLIED FIRST...get *all* your needs *faster* from this *one* central source.

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FREE *Send for Today's Most Complete* **BUYING GUIDE**

ALLIED RADIO CORPORATION
In the Heart of America's Transportation System
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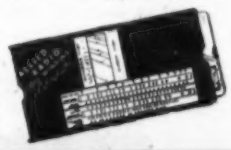
NEW Rapid R-F Resonance and Coil Winding Calculator
New, dual-purpose Calculator devised by Allied for fast and accurate determination of resonance factors and coil winding data. Simple, easy to use. Send for it now. Price net, only.....25c



ALLIED RADIO *Delivers the Goods*

▲ Mention Item NED-1481 when writing ▲

WHAT IN SAM HILL HAS WAR GOT TO DO WITH YOUR FUTURE PRODUCTS?

Answer: Probably a lot. Many manufacturers unfamiliar with plastics before the war now see plastics—not as substitutes—but as materials with special advantages of their own. Plastics are doing a host of new war essential jobs, and will do hundreds more now sidetracked by war-first demands. Among the technical plastics, you'll want to look into Synthane. And the easiest way to start is by sending for the complete Synthane catalog today. A request on your company letterhead will bring it promptly.

SYNTHANE
TECHNICAL PLASTICS

SHEETS • RODS
TUBES • FABRICATED
PARTS • MOLDED-
LAMINATED • MOLDED-
MACERATED

SYNTHANE CORPORATION,
N. E. River Road, Oaks, Penna.
Please send me a copy of the complete Synthane Plastics Catalog.

*Name*_____
*Title*_____
*Company Name*_____
*Address*_____
*City*_____ *State*_____

▲ Mention Item NED-1482 when writing ▲

Only PANNIER SUPREME STAMPING HOLDERS HAVE all THESE ADVANTAGES

REPLACEABLE HEAD

SHAPE DISTRIBUTES BLOW

ONE SOLID PIECE

HARDENED ANVIL

NO PINS OR SPRINGS

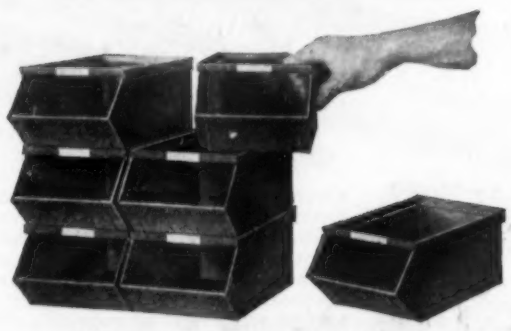
Exclusive, patented, alloy steel ANVIL prevents wear, assures constant type alignment. Replaceable Striking Head eliminates mushrooming and spalling problems; adds greatly to holder life. Many other features help to reduce stamping costs. Tell us material to be stamped, conditions, size and number of characters in a line. Our engineers will recommend the kind of holder best suited to your specific needs. Many sizes, types and styles available.

Steel Type, Stamps, Dies; Embossing Equipments; Metal Tags, Checks, Badges, Stencils; Rubber Dies, Stamps.

PANNIER BROS. STAMP CO.
301 PANNIER BLDG., N. S., PITTSBURGH, PA.

▲ Mention Item NED-1483 when writing ▲

We have been given permission by WPB to manufacture Stackbins to be used as portable containers for production and assembly.



Save Time and Labor Handling Parts and Materials

Patented *Stackbins* keep parts and materials instantly accessible—eliminate waste hand motions—stack rigidly to form units of exactly the right shape and capacity at the point of assembly—save time and labor handling parts and materials.

Write today for full details and prices on all-welded steel *Stackbins*. Stackbin Corp., 71 Troy St., Providence, R. I.

STACKBINS
"STACKED AND STILL ACCESSIBLE"

▲ Mention Item NED-1484 when writing ▲

CHOOSE THE CASTER WITH
ONE-PIECE *Construction*

In Service FORGEWELD Casters top plate and King pin are drop forged from single piece of SAE-1045 steel.

Oversize SAE-1045 axle with Hyatt roller bearing.

Swivel ball bearing of twin circles in hardened raceways.

Heavy Duty carry 6,000 to 8,000 lbs. per set; Regular duty carry 3,800 lbs. per set.

Wheel sizes, 3¼" to 8" diam. Regular duty. Wheel sizes, 5" to 12" diam. Heavy duty.

Wheels machine-faced Ni-Steel Iron or Service Molded Plastic Wheels for Floor Protection.

SERVICE CASTER & TRUCK DIVISION
OF DOMESTIC INDUSTRIES, INC.
578 N. Brownswood Avenue, Albion, Michigan
Eastern Factory: 400-08 Somerville Ave., Somerville (Boston) Mass.
Toronto, Canada: United Steel Corporation, Ltd., SC&T Co. Division

SERVICE
Trucks, Casters and Specially Designed Lifting and Hauling Units

▲ Mention Item NED-1485 when writing ▲

HEAT TREATING FURNACE

Rapid and effective tempering or drawing small parts is accomplished with this model 128 heavy duty oil bath furnace. It may be used to relieve stresses set up by quenching or to bring about change in grain structure. Gas fired, these units are heated by immersion tubes for thermal efficiency and quick pick-up. Super-power burners are completely enclosed, but are readily accessible through door at front of unit.

Thermostatic control assures accurate temperatures. Indicating regulator is mounted conveniently on instrument panel. Furnaces may be equipped with right or left drain boards, pitched so that oil flows back into bath. Square or cylindrical baskets for holding parts to be treated are available for use with furnace. This same design is available in variety of sizes. Made by **Stanwood Corp.**, 4819 W. Cortland St., Chicago 39, Ill.

▲ Mention Item NED-1486 when writing ▲

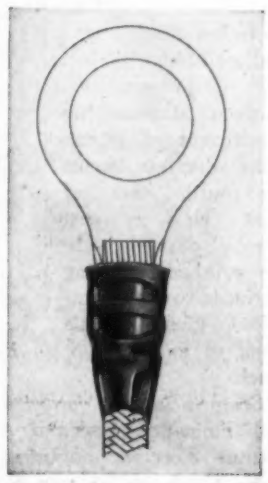
WATER DE-IONIZER

Purified water to replace distilled water, produced at low cost, can be obtained through de-ionizing method. Process will produce de-ionized water to fit any chemical or industrial purpose. De-ionized water containing from two to ten parts of dissolved solids per million is comparable to single distilled water and is suitable for electroplating operations. Process developed by **Hanson-Van Winkle-Munning Co.**, W. Church St., Matawan, N. J.

▲ Mention Item NED-1487 when writing ▲

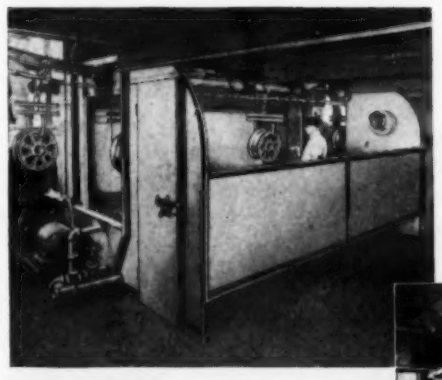
INSULATED TERMINALS

Having insulation permanently bonded to copper so that it cannot be removed, AMP Diamond Grip insulation support terminal is of solderless type. Pre-insulation eliminates need for stocking and applying insulating sleeving to crimped terminals. Only single operation is required to firmly crimp terminal on wire with precision installation dies. Pre-insulation follows contour of crimp without distortion, cracking or drying out in use.



Identification of terminals and matching dies is made easy by marking each of two sizes with distinctive color; red for terminals and dies for wire sizes 22 to 18 and blue for wire sizes 16 to 14. Made by **Aircraft-Marine Products Inc.**, 1591Y N. Fourth St., Harrisburg, Pa.

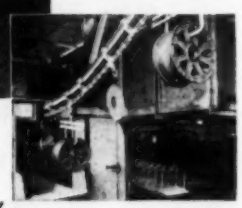
▲ Mention Item NED-1488 when writing ▲



★ (top) Aircraft wheels being painted in a Peters-Dalton Spray Booth. Air is pulled toward flood sheet carrying away all spray. Constant fresh air in booth.

★ (center) Part of same complete system for finish processing bomber wheels. Booth in foreground; oven overhead to provide more usable floor space.

★ (lower) Cutaway of individual Hydro-Whirl Spray Booth showing construction and principle (trough type unit).

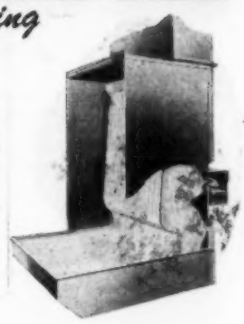


HYDRO-WHIRL
POINTS THE WAY TO
Efficient Process Finishing

INDIVIDUAL SPRAY BOOTHS • OVENS • WASHERS • COMPLETE FINISH PROCESSING SYSTEMS • VENTILATING SYSTEMS

WHETHER it be the installation of a single unit or one involving comprehensive engineering skill for a complete finish processing or ventilating system, Peters-Dalton engineers are thoroughly equipped through years of experience to build and install the equipment that will make for unequalled plant efficiency.

EXPERIENCED maintenance men acknowledge the superiority of the Hydro-Whirl principle; know the efficient, trouble-free economical operation of Hydro-Whirl installations in hundreds of plants throughout the country. Feel free to write us on any particular problem you have relating to paint spraying, finish processing or ventilation . . . no obligation.



PETERS-DALTON *Incorporated*
632 EAST FOREST AVE. • DETROIT 1, MICH.
(Formerly Industrial Sheet Metal Works)
MFRS. HYDRO-WHIRL DUST COLLECTORS AND SPRAY BOOTHS—INDUSTRIAL OVENS, MECHANICAL WASHERS AND VENTILATING SYSTEMS

▲ Mention Item NED-1489 when writing ▲

WELDO
Brig

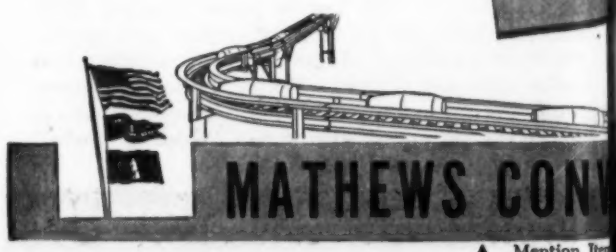
***Rubber** has revolutionized*

DE-BURRING FINISHING POLISHING

▲ Mention Ite

NEW!

This attractive bulletin contains 24 pages of data covering roller and frame sizes, roller and bearing construction, curves, supports, special devices, couplings, light wheel units, ball transfers, and typical installations. It can be of considerable help in planning Gravity Roller Conveyer applications. Your copy will be sent immediately upon request.



MATHEWS CONV

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▲ Mention Ite

WELDON ROBERTS
Brightboy
REG. U.S. PAT. OFF.

Made in 3 textures for a wide variety of applications, BRIGHTBOY represents a *combination* of abrasive and resilient rubber. The rubber in Brightboy cleans and polishes, while the abrasive de-burrs and finishes.

The resiliency of the rubber and its relative softness—unlike harder abrasive forms—*cushion* the abrasive action. Combined with the abrasive, the rubber does an all-in-one job that eliminates the step-by-step operations between a grind and a buff, and frequently serves as the final polish.

BRIGHTBOY requires no special preparation before use. It is made in wheels and rods for use on grinders, lathes, drill presses and polishing machines, and in blocks with flat or curved surfaces for use on parts worked by hand. Methods and Applications are explained in an attractive booklet obtainable together with catalog and prices from your dealer or from us. Brightboy field representatives are at your service.

BRIGHTBOY INDUSTRIAL DIVISION
Weldon Roberts Rubber Co. Newark, N. J

▲ Mention Item NED-1490 when writing ▲

MATHEWS CONVEYERS FOR MECHANIZED PRODUCTION
MATHEWS CONVEYOR COMPANY ELLWOOD CITY PENNSYLVANIA

▲ Mention Item NED-1491 when writing ▲

AROUND THE PLANT-

Union Metal MATERIALS HANDLING UNITS Speed War Production

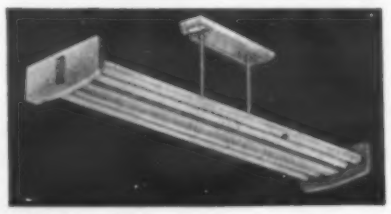
HERE is a view inside a giant aircraft products plant. The ingenious use of Union Metal Double-Corrugated All-Steel Skids, which have been turned upside down to serve as trays for long bar stock, has brought order out of confusion . . . cleared the floors for action . . . and simplified the fast flow of needed parts.

Union Metal All-Steel Skids, Boxes, and Pallets used in this and other great factories were engineered to do their job better, faster, cheaper. They're rugged, they're adaptable to a multitude of uses, and they're light and easy to handle. The complete line includes a size and type to meet every materials handling requirement. Write for catalog to

THE UNION METAL MANUFACTURING CO., *Canton 5, Ohio*

▲ Mention Item NED-1492 when writing ▲

COMMERCIAL FIXTURE



Using four 40-watt fluorescent lamps, model No. 2044 commercial fluorescent fixture provides cool, comfortable, economical lighting. Containing less than 6 pounds of metal, it conforms to latest WPB regulations. Mounting may be suspension or surface type, individually or in continuous rows. Metal tracks fastened to ceiling with toggle bolts permit fixtures to be slid into place. Metal wireway channel and end pieces are finished in high-gloss chip-proof white enamel. Ample knockouts are provided.

Unit is completely wired, ready for hanging. Standard Tulamp ballasts, starters and sockets are used. Underwriters' Laboratories approved, this fixture has power factor of over 90 per cent and there is no stroboscopic effect. It operates on 110-125-volt, 60-cycle alternating current. Higher voltage units are available. Made by **Mitchell Mfg. Co.,** Dept. N-2, 2525 Clybourn Ave., Chicago 14, Ill.

▲ Mention Item NED-1493 when writing ▲

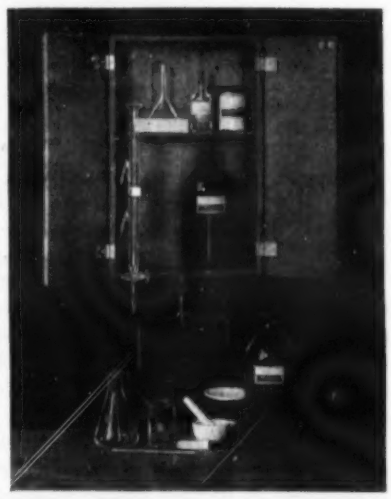
FIELD-COIL COATING

Providing tough, hard coating impervious to moisture, acids or alkalis for use on stator field-coils on electric motors, Insl-x will not chip or crack. Use of this coating makes it unnecessary to tape coils after winding. All that need be done is to secure corners tightly. Tendency of material to contract when drying will provide sealing coat that holds wire as in vise and prevents vibration or shifting.

This compound is particularly desirable for aircraft because its thin coat requires less space and involves less weight than standard insulating materials. For coils which are pre-shaped, Insl-x No. 33 should be used; where shaping is done after insulation, No. 11-6, a more flexible material, is required. Made by **Insl-X Co.,** Dept. NED, 857 Meeker Ave., Brooklyn, N. Y.

▲ Mention Item NED-1494 when writing ▲

CYANIDE BATH TESTER



Designed specifically to determine quantity of sodium cyanide in molten cyanide mixtures used in heat treatment of metals, analytical set DCN may be used by non-technical employes. Sample is drawn from bath by means of dry steel rod and portion of this sample is dissolved in water and checked with solution provided in set. Direct reading is obtained, giving percentage of sodium cyanide in sample without further calculation. All items and apparatus in set fit into compact cabinet. List price is $22.50. Made by **Kocour Co.,** 4724 S. Christiana Ave., Chicago 32, Ill.

▲ Mention Item NED-1495 when writing ▲

Speed the Attack . . . WITH
ARO
PNEUMATIC TOOLS

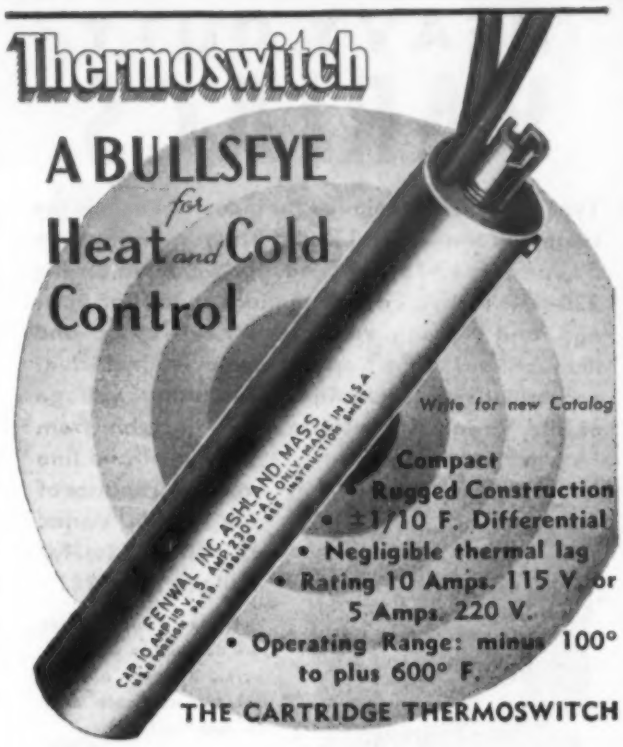
Send more bombloads into Naziland and Jap-land...by speeding up small tool jobs with ARO Pneumatic Tools! With tremendous power in relation to small size and light weight, ARO Tools are *right* for round-the-clock drilling, nut-setting, screw-driving, grinding, similar operations. Greater efficiency, less fatigue, ideal for women! Write for new catalog. The Aro Equipment Corp., Bryan, Ohio.

A handful of power in this new ARO Model 101 with plastic housing and handle—weighs only 1 lb. 9 oz.—operates full ¼-inch drill.

ARO

▲ Mention Item NED-1496 when writing ▲

Thermoswitch



Fenwal INCORPORATED
70 PLEASANT ST., ASHLAND, MASSACHUSETTS

▲ Mention Item NED-1497 when writing ▲

PANGBORN
ROTOBLAST

FOR MORE BLAST CLEANING IN LESS TIME AND WITH LESS COST

Pangborn ROTOBLAST had its part in the breaking of the blast cleaning bottleneck many months ago and since then has maintained such great efficiency that case after case attest to the superior job it is doing for vital war production.

Original "E" Award received March 13, 1943. Renewal of award with white star added to banner November 5, 1943.

Brighten your blast cleaning outlook with the help of Pangborn ROTOBLAST. Years of efficient, economical service are yours for the asking. Send for descriptive ROTOBLAST literature, today!

PANGBORN
WORLD'S LARGEST MANUFACTURERS OF BLAST CLEANING AND DUST COLLECTING EQUIPMENT
PANGBORN CORPORATION • • HAGERSTOWN, MD.

▲ Mention Item NED-1498 when writing ▲

FOR SCREW MACHINE PRODUCTS
Write Ritco

All types of screw machine products to blueprint, in all materials. Sizes: round stock 1/16" to 2⅝"; hex. stock 1/16" to 2¼". Ritco's modern screw machine equipment assures high accuracy and fine finish.

SPECIAL BOLTS, NUTS & STUDS • DROP FORGING & DIE SINKING • HEAT TREATING • PARKERIZING
SCREW MACHINE PRODUCTS
SPRAYED METAL SERVICE

RITCO
We will gladly quote on your specifications.
CATALOG ON REQUEST

RHODE ISLAND TOOL CO.
148 West River St., Providence 1, Rhode Island
Serving American Industry Since 1834

▲ Mention Item NED-1499 when writing ▲

HEAVY DUTY VARIACS

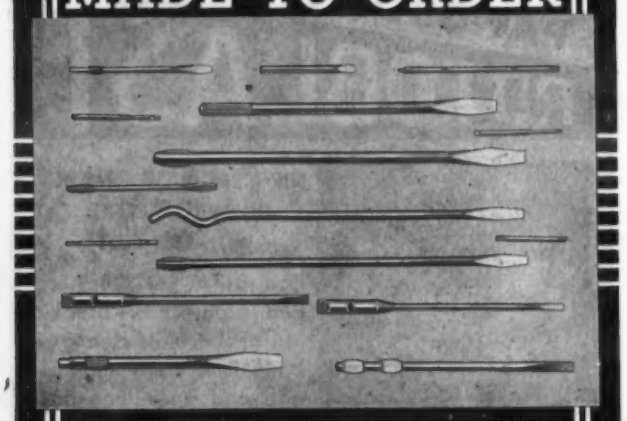
Type 50 Variac, designed for industrial use, is the largest of the General Radio Variacs. Ratings are 5 kva for the 115-volt model and 7.5 kva for the 230-volt model. For the manual control of voltage, and through voltage, of heat, speed and illumination, Variacs are fast replacing inefficient and bulky resistive controls. The output voltage of the Variac is continuously adjustable from zero to above line voltage. The price of the Type 50 Variac is $100. Write for Bulletin No. 828.

Because all our facilities are devoted to war projects, Variacs are at present available only for war work.

GENERAL RADIO COMPANY
Cambridge 39, Massachusetts
NEW YORK CHICAGO LOS ANGELES

▲ Mention Item NED-1503 when writing ▲

MADE TO ORDER



Screw driver blades to order for assembly in any type of handle, wooden, composition or plastic.

Points in either keystone or cabinet type. Edge of point carefully made and of uniform thickness.

Shanks are winged, fluted, formed or milled, as shown.

Blades furnished in plain finish, blued or nickle plated.

The Torrington Company
SPECIALTY DEP'T.
Torrington, Conn., U.S.A.

▲ Mention Item NED-1504 when writing ▲

SPRAY EQUIPMENT

Pontoon bridge parts being sprayed at Lord & Burnham. For information on spray equipment—manually or automatically operated—write for Catalog No. 80.

ECLIPSE AIR BRUSH CO.
309 Park Ave., Newark 7, N. J.

ECLIPSE

▲ Mention Item NED-1505 when writing ▲

TAPPING MACHINE

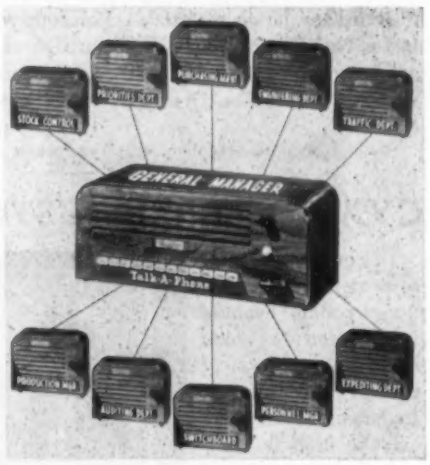
Complete manufacturing rights for Bakewell tapping machines have recently been acquired by Warner & Swasey Co. This precision threading and tapping machine will tap or cut threads at speeds required by mass production and is capable of holding threads to class 5 tolerance.

Hardened and ground lead screw controls feed of tap as it enters work. Upper portion of lead screw is hob having same pitch threads as screw itself. Thus, hob cuts into brass guide fingers which are brought into engagement against lead screw, fingers being actuated by solenoid mechanism. Prolonged tap life is claimed to be assured by safety clutch which is adjustable to safe torsional resistance of tap and type of material used. If tap becomes dull or strikes chips in blind hole, cork-insert disc clutch releases instantly.

Machine will cut either right or left hand threads internally or externally in plastics, aluminum and its alloys, magnesium, bronze, nickel and stainless steels. Made by Warner & Swasey Co., 5701 Carnegie Ave., Cleveland, O.

▲ Mention Item NED-1506 when writing ▲

COMMUNICATION SYSTEM



Enabling executive to coordinate entire plant by having all departments within easy communication reach, No. C-410 Coordinator intercommunication system consists of single master station working with up to ten or more substations. Master station may be used to communicate with one, two or all outlying departments.

Silent feature may be used to shut out at master station all sounds originating at substation locations, yet it permits substations to call master station at will. Extra power can be provided for certain locations where high noise levels exist. This extra power may be used as required by pushing button marked "Power".

Equipment operates on 110-115 volts alternating or direct current. System is also available for additional substations in multiples of 10, thus making possible any required hook-up. Made by Talk-A-Phone Mfg. Co., 1207 W. Van Buren St., Chicago 7, Ill.

▲ Mention Item NED-1507 when writing ▲

LOW COST STORAGE BINS QUICKLY BUILT

Diagonally Pointed Stave

Powerful rust-proof lugs bind all staves at all joints

Neff & Fry bins are available to essential industry. Will successfully store any bulk material that will flow, including liquids...assure fast handling...important labor savings...take little room...keep premises clean and orderly.

Any capacity. Any type conveyor.

Trained erection crews.

Many years experience and broad guarantee. Get catalog.

NEFF & FRY
THE NEFF & FRY CO.
CAMDEN, OHIO
Est. 1894

▲ Mention Item NED-1508 when writing ▲

SMOOTH STEPLESS SPEED ADJUSTMENT

Provides smooth stepless output speed adjustment from minimum to maximum in both directions when driven by constant speed nonreversing prime mover. 2 to 300 horsepower capacity.

Compact, self-contained and self-lubricating, the unit provides efficient speed and torque control with inherent overload protection. It may be stalled repeatedly without damage.

Write for application data outlining your requirements as to speed and torque range.

VICKERS *Incorporated*
1456 Oakman Blvd. • DETROIT, MICHIGAN

▲ Mention Item NED-1509 when writing ▲

INDUSTRIAL So-Lo REPAIRS RUBBER

PROLONGS LIFE OF CONVEYOR BELTS ...RESURFACES PULLEYS...PATCHES RUBBER BOOTS, GLOVES, ETC.

Leading industries use INDUSTRIAL So-Lo. Quickly and efficiently patches and resurfaces breaks, repairs rips, burnt and worn spots, and fills holes in industrial belting. Increases belt life and assures "lower belt cost per mile."

MANY OTHER USES

Wide range of other uses. Resurfaces pulleys—metal, wood, composition. Repairs rubber boots and gloves. Makes metal or concrete stair treads slip-proof, lessening accidents. Also effective for insulating switch handles, foot grips, and other electrical devices.

JUST SPREAD ON— DRIES TOUGH OVERNIGHT

Easy to use. No special tools. Just spread it on to desired thickness—over night it "air vulcanizes". Waterproof—acidproof—oil and grease resistant. Dries smooth and flexible—tough as rubber.

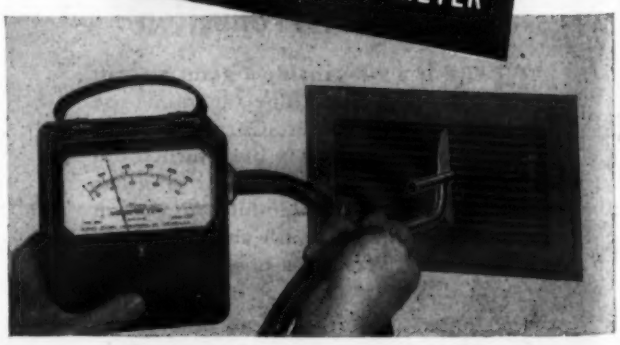
For full details, write AT ONCE to Dept. A-3.

So-Lo Works, Inc.
LOVELAND, OHIO

▲ Mention Item NED-1510 when writing ▲

Alnor Velometer

The Only Instantaneous, Direct Reading, AIR VELOCITY METER



● Only the versatile *Alnor* Velometer can give you instantaneous direct readings of air speed measured in feet per minute. It offers the only convenient and satisfactory instrument for checking draft, leaks around doors and windows or in ducts, velocities of ceiling outlets and similar air diffusers. It is ideal for duct velocities and pressures, velocities at grilles and registers. Anyone can use the Velometer—no calculations, no leveling, no timing.

The Velometer is made in several standard ranges from 20 fpm to 6000 fpm, and up to 3 inches static or total pressure. Special ranges available as low as 10 fpm and up to 25,000 fpm velocity and 20 inches pressure.

Write for Bulletin No. 2446-E.

Illinois Testing Laboratories, Inc.
430 NORTH LA SALLE STREET • CHICAGO 10, ILLINOIS

▲ Mention Item NED-1511 when writing ▲

IT'S NO TRICK AT ALL WITH TORIT

TORIT DUST COLLECTORS

This "cutting" job raises no dust but in industrial grinding and polishing operations dust is a menace, endangering employes' health and valuable machinery.

TORIT Dust Collectors trap dust at its source. Portable, and completely self-contained, they fit into present production layouts and are easily moved to meet new conditions. For complete information write:

TORIT MANUFACTURING COMPANY
298 Walnut St.
St. Paul 2 Minn.

TORIT Dust Collectors SELF-CONTAINED UNITS

▲ Mention Item NED-1512 when writing ▲

X-RAY FILM ILLUMINATOR

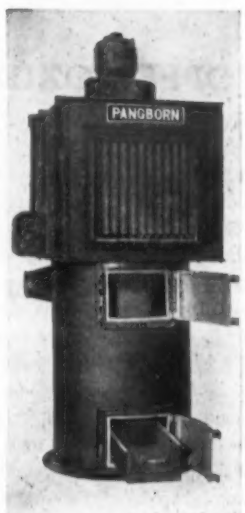
Facilitating accurate observation of detail, this high intensity illuminator for viewing industrial X-ray films provides four times more illumination than heretofore available. Illuminator also permits finger-tip adjustment to any desired brightness for films of different density or for different parts of same film.

Intensity of light is obtained from Photoflood lamps which, because of their heat, would curl and damage films and even crack glass front of conventionally designed illuminator. This damage is avoided by cooling system using built-in fan to blow air between inner heat resisting glass and outer flashed opal glass front. Foot switch control causes lamps to be "on" only when actually in use. This control greatly prolongs lamp life and eases strain on eyes of observer.

Special feature of illuminator is high intensity spot, just 3 inches in diameter, giving four times brightness of large section. Glass front of spot is water cooled, with light from lamp passing through four inches of water. Illuminator made by **The Kelley-Koett Mfg. Co.**, Covington, Ky.

▲ Mention Item NED-1514 when writing ▲

INDUSTRIAL DUST COLLECTOR



Adaptable for all types of industrial applications involving smaller air volumes and where self-contained unit is indicated, type CK unit dust collectors are available in three sizes with capacities of 1000, 2000 and 3000 cubic feet of air per minute. They are suitable for all dry dust control applications within their rated capacities.

Two-stage separation reduces filter surface wear to minimum. Preliminary centrifugal section precipitates bulk of dust, reducing loading on secondary cloth screen sections. Ample cleanout facilities are provided for both filtering sections. Exhauster of steel plate type is direct connected to motor. It is mounted on top of unit for accessibility and handles only cleaned air. Discharge may be arranged in any of four directions.

Magnetic starter is provided for exhauster motors and hand switch for screen shaking mechanism. Controls interlock to prevent simultaneous operation of both motors. Electrical timer can be furnished to operate shaker motor automatically for short time each time exhauster motor is shut down. Unit is easily installed, requiring minimum of piping and wiring. Made by **Pangborn Corp.**, 140 Pangborn Blvd., Hagerstown, Md.

▲ Mention Item NED-1515 when writing ▲

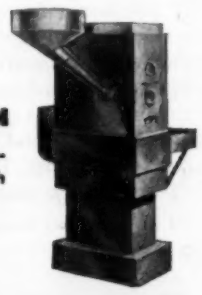
THEY CALL IT *Precision* BOMBING

High in the lonely sky they lay their eggs with deadly accuracy . . . and far below an enemy munitions plant is shattered. It's as simple as that . . .

But into every mission goes precision thinking; into every pilot precision instruction. And into every bomb goes precision manufacture.

Today Electric Eye Inspection Equipment is helping to put precision into vital bomb parts. Gauging to tolerances of plus or minus .0001 in *micro-seconds and automatically*; speeding production of war equipment and munitions; lowering inspection costs; releasing manpower for duty on both the war front and the production front.

Tomorrow Electric Eye's wartime inspection efficiency will be turned to use in peacetime industry. The precision, speed and economy of this automatic inspection equipment is war-bound now ...but information is available as you plan to solve your future inspection problems.



AUTOMATIC *Precision* INSPECTION

for Size—Weight—Thickness—Contour—Finish—Flow—Color—Speed—Light—Strength—Height—Depth.

Electric Eye EQUIPMENT COMPANY
7 W. FAIRCHILD STREET
DANVILLE, ILLINOIS

▲ Mention Item NED-1513 when writing ▲

HYDRAULIC VALVES

EDWARD 6000 lb STOP VALVES

FIG. 158 GLOBE
Sizes ¼ in. to 2 in.
Screwed ends or Socket ends
Forged steel body
Swivel needle disk
Inside screw . . . .

For general industrial hydraulic service and other services where stresses are of indeterminate magnitude, and temperatures are below 300 F. Rated at 6,000 lb at 125 F, Edward Fig. 158 globe stop valves have wear-resistant EValloy (stainless steel) seats, swivel needle disks and stems, large knobbed handwheels for easy operation, and inside screw construction for maximum packing life.

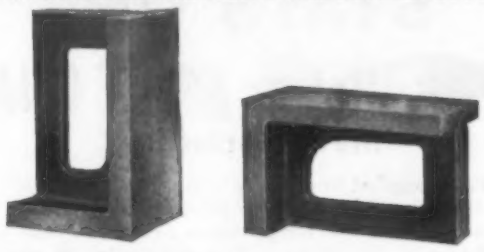
Send for free Catalog 101 today!

THE EDWARD VALVE & MFG. CO., INC.
1240 WEST 144th STREET • EAST CHICAGO, IND.

Edward Valves
Forged Steel & Cast Steel

▲ Mention Item NED-1516 when writing ▲

Challenge
UNIVERSAL RIGHT ANGLE IRONS



● For square reference surfaces or as height blocks in measuring large work. Opening in rib for hand grip. Made of specially heat treated semi-steel. Ends and sides precision ground.

● V-BLOCKS—For supporting shafts and other cylindrical work when drilling, checking or inspecting. Precision ground to a V accuracy.

● PARALLELS—Box or Solid. Special anaylsis semi-steel. Precision ground.

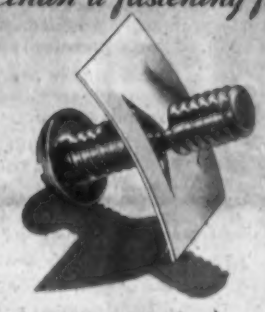
● ANGLE PLATES—Made in 22 sizes. Fine-grain semi-steel—Precision ground.

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

THE CHALLENGE MACHINERY CO.
Main Office and Factory: GRAND HAVEN, MICH. 1897 50TH ANNIVERSARY 1943 Eastern Sales Office: 50 Church St., NEW YORK

▲ Mention Item NED-1517 when writing ▲

Speed Nuts perform *more than a fastening function*



They prevent vibration loosening by means of their exclusive Double Spring-Tension Lock that ABSORBS the vibration • They are applied faster and so reduce assembly time and costs, tremendously • They avoid use of wrenches and needless handling of parts • They are even made in scores of ingenious shapes that completely eliminate two or more parts • Their wide bearing surface removes the need for spanner washers • They save from 50% to 80% in weight • If you do not have our 20 page summary catalog No. 185, write for your copy today.

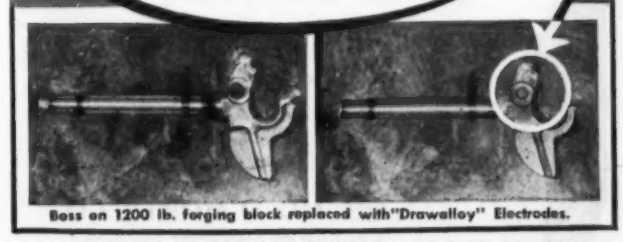
TINNERMAN PRODUCTS, INC.
2044 FULTON ROAD, CLEVELAND 13, OHIO
Wallace Barnes Co., Ltd., Hamilton, Ontario Simmonds Aerocessories, Ltd., London

FASTEST THING IN FASTENINGS...

▲ Mention Item NED-1518 when writing ▲

Do You Know - -
THAT THE LIFE OF YOUR FORGING DIES CAN BE EXTENDED?

It's being done every day by welding with Eureka "Drawalloy" Welding Electrodes. Tons of forging dies and untold man hours are saved in eliminating re-sinking operations.



Boss on 1200 lb. forging block replaced with "Drawalloy" Electrodes.

The Welding Equipment & Supply Company's Eureka "Drawalloy" Welding Electrodes have fulfilled the long felt need in the forging industry for welding electrodes that would *efficiently* rebuild, to original dimensions, the contours of forging dies that have heat checked or spalled.

This development of "Drawalloy" electrodes makes it possible to rebuild defective forging dies so that all welded deposits match the characteristics of typical forging block steel. Thus the welded areas and those adjacent to them can be machined to the original dimensions of the die.

Eureka "Drawalloy" Electrodes are available in types No. 240 and No. 340, providing hardness ranges of deposits from 240 to 380 Brinell.

★ *Send for our catalog listing Eureka "Drawalloy" Electrodes* ★

WELDING EQUIPMENT & SUPPLY CO.
223 LEIB STREET • DETROIT, MICHIGAN

▲ Mention Item NED-1519 when writing ▲

THUR-MA-LOX STAYS ON Hot or Cold Metal Surfaces

Easily applied by spray or brush, THUR-MA-LOX* #7 Black is a highly durable paint for surfaces subjected to abnormal temperatures...from "*ice cold*" right up to "*cherry red.*" This paint, with its unusual properties of elasticity withstanding contraction and expansion of metal, will not crack or peel and provides a protective coating that LASTS!

Engineers maintaining equipment now operating under war-time overload conditions will welcome this positive protection against abnormal temperatures; the elements; fumes of sulphur dioxide, carbon dioxide, acetic acid or chlorine.

Write for Bulletin I-T describing THUR-MA-LOX more in detail and how to apply it.

*Patented

THE M. W. KELLOGG COMPANY
Exclusive Sales Distributors
225 BROADWAY NEW YORK 7, N. Y.
Representatives in: Chicago, Ill. • Detroit, Mich. • Pittsburgh, Pa. • Los Angeles, Calif.
THURMALOX COMPANY • *Manufacturers* • DOYLESTOWN PA.

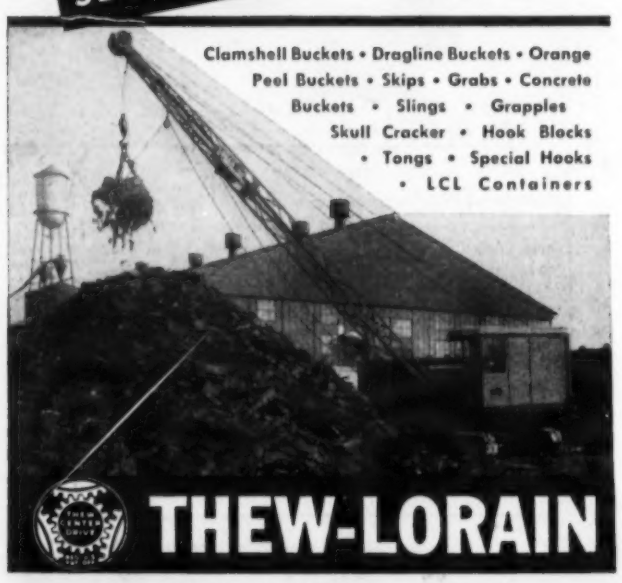
▲ Mention Item NED-1520 when writing ▲

1 LORAIN OFFERS 14 MATERIAL HANDLING SERVICES

• This Lorain crane is equipped with a magnet to move scrap with the greatest efficiency. Listed below are 13 more attachments and accessories that may be used on this unit to solve practically any material handling problem, economically and profitably.

Lorain cranes are offered in 5 to 40-ton capacities. Write for descriptive catalogs.

THE THEW SHOVEL COMPANY
Lorain, Ohio



▲ Mention Item NED-1521 when writing ▲

one man SWEEPING DEPT. $88.00

With this machine one man (or woman) can clean approximately 16,000 square feet of open floor space in one hour . . Consistent with modern shop practice men with brooms are rapidly being replaced with this mechanized method . . releasing manpower to help speed the wheels of production, and relieving still further the burden of non-productive labor.

Efficient, rugged and easy to operate in large or small areas— $88.00 F.O.B. factory.

THE MOTO-MOWER CO.
Industrial Sweeper Division
4590 Woodward Ave., Detroit, Mich.

▲ Mention Item NED-1522 when writing ▲

DEMOUNTABLE V-BELT SHEAVE

Known as Magic-Grip sheave, this unit is designed for quick and easy mounting and demounting. It locks to shaft in single tightening operation. As tapered split bushing, which accommodates normal shaft tolerances, is drawn into sheave, bushing, sheave and shaft are locked together simultaneously. This positive clamp fit provides perfect centering and security, assuring smooth running performance which is free from back-lash and shear.

Design permits sheave to be mounted close to motor, increasing bearing life by reducing shaft overhang. Sheaves are stocked in complete line for practically all drive applications. Made by **Allis-Chalmers Mfg. Co.**, 6900 Norman St., Milwaukee 1, Wis.

▲ Mention Item NED-1523 when writing ▲

PLASTIC PLATING PROCESS

Metal plating on plastics, glass and similar materials has been improved and is now available for limited use. Strong unity of bond is assured between plating metal and plastic. It withstands impact, vibration and extreme temperatures without peeling or blistering, to limits of dielectric itself which is strengthened by plating process. Developed by Precision Paper Tube Co. Process is being applied by **Electro Plastic Processes**, 2039 W. Charleston St., Chicago 54, Ill.

▲ Mention Item NED-1524 when writing ▲

COPPER OXIDE RECTIFIERS

Available in wide range of sizes and styles for industrial and commercial equipment applications, Coprox copper oxide rectifiers feature gold contacts on copper oxide pellets, highly adaptable mountings, presoldered lead wires and other arrangements to prevent overheating during assembly of equipment using these units. Center tap type BX-100 full-wave rectifier is completely enclosed in bakelite and rectifies high frequency current, operating in special circuits up to eight megacycles. Double bridge type BX-22.3 unit has excellent temperature and temperature-current characteristics. BX-22.4 is single half-wave type; BX-22.2 is full wave and BX-22.4 is double half-wave. Conservative ratings are claimed to show low forward resistance, combined with high leakage resistance. Made by **Bradley Laboratories, Inc.**, 82 Meadow St., New Haven 10, Conn.

BX-22.3

BX-100

BX-22.4

▲ Mention Item NED-1525 when writing ▲

Hands safe in Stanzoils do better work

{ Not all synthetic gloves are oil resistant! }

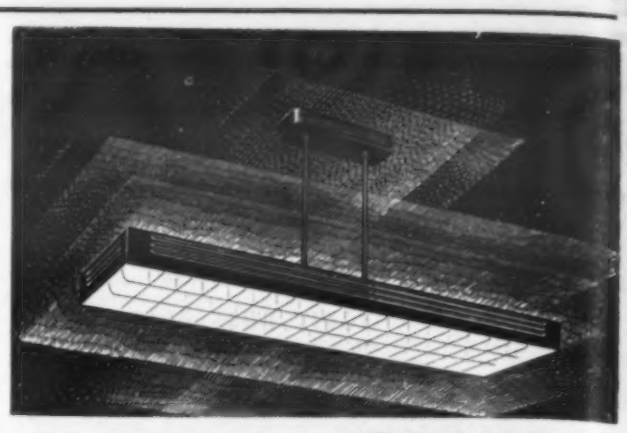
Don't risk loss of valuable hands these days — and costly injury claims — when Stanzoils of DuPont's neoprene offer such remarkably complete protection. Workers enjoy wearing them, do better work. These neoprene gloves resist damage from oils, acids, caustics, last 3 to 7 times longer than rubber, cost least-per-hour of use. Standard styles, sizes; black and white. Protect busy hands with Stanzoils — write today for all the facts.

STANZOIL PIONEER

Synthetic Rubber Division
THE PIONEER RUBBER COMPANY
248 Tiffin Rd., Willard, Ohio, U.S.A.
New York • Los Angeles

MADE WITH DU PONT NEOPRENE

▲ Mention Item NED-1526 when writing ▲



The Wakefield ADMIRAL for warplant office or drafting

MADE largely of wood, the ADMIRAL conserves war material, meets WPB limits, and *provides high intensity, diffused, fluorescent light.* Helps speed war plant paper work, reduce eyestrain. Puts 90% of its light *down;* rest goes upward to avoid ceiling contrasts. Especially good for critical seeing jobs, or in space with poor ceilings. Comes in 2, 3 and 4-lamp units. Write for details on the ADMIRAL and other Wakefield fluorescent units.

HELP PREVENT INDUSTRIAL ACCIDENTS . . . GUARD MOVING PARTS . . . HAVE GOOD LIGHT . . . BE ALERT

THE F. W. Wakefield BRASS COMPANY
RED SPOT LIGHTING FOR WAR PRODUCTION . . . FOR PEACETIME FUTURE
VERMILION, OHIO

▲ Mention Item NED-1527 when writing ▲

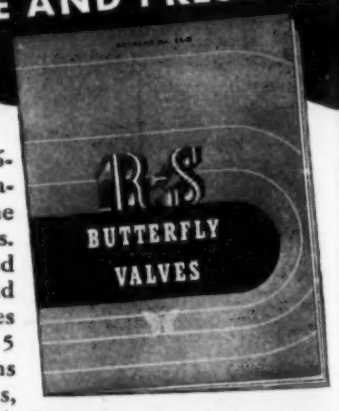
For SAVING and SAFETY
Colson UNIVERSAL DRUM TRUCK

Faster performance
Greater safety for operator
Instant adjustment 24" to 40"

THE COLSON CORPORATION
ELYRIA, OHIO
Sales Offices and Dealers in Principal Cities
CASTERS • INDUSTRIAL TRUCKS AND PLATFORMS • LIFT JACK SYSTEMS

▲ Mention Item NED-1528 when writing ▲

Simplified CONTROL AND SHUT-OFF OF VOLUME AND PRESSURE



Here is a brand new 36-page catalog which features the complete line of R-S Butterfly Valves. It is profusely illustrated with both manual and power operated valves for pressures from 15 to 900 psi. It contains detailed specifications, applications and descriptions of new type valves. Among the new type valves is the dual valve, designed for a high pressure drop and small volume or low pressure drop and large volume. The three-way valve, designed for mixing and quick interchange service is also illustrated.

Write on your company's letterhead for a copy of Catalog No. 14-B.

VALVE DIVISION
R-S PRODUCTS CORPORATION • 4527 GERMANTOWN AVE., PHILADELPHIA 44, PA.

R-S *Streamlined* BUTTERFLY VALVES

▲ Mention Item NED-1529 when writing ▲

WAKE UP SLEEPY MACHINES

with the help of G-E TIME METERS

Available for either flush or conduit mounting.

Tells you exactly how much time an electrically powered machine is idle. Then you can schedule work to use this idle time.

A typical example: A manufacturer wanted to increase production by installing a second winding machine, at a cost of $7200. A G-E time meter disclosed that, every shift, the old machine was running only 13% of the time. The rest of the time was spent in set-up. As a result, additional set-up equipment was purchased, at a cost of $3300, saving $3900. Production was boosted to meet demands.

G-E time meters are available to meet your specific requirements. Bulletin GEA-3299 gives complete listings. Write for it today. *General Electric, Schenectady, N. Y.*

GENERAL ELECTRIC

603-34-6500

▲ Mention Item NED-1530 when writing ▲

Proved on Critical War Jobs

Developed by Norton research several years ago, 57 Alundum abrasive was an immediate and outstanding success in wheels for cylindrical, centerless and internal grinding. Limited production facilities, however, made it necessary to restrict the use of the new wheels to those critical war jobs for which their characteristics were most needed.

Now increased production capacity makes it possible to offer Norton grinding wheels of 57 Alundum abrasive for all jobs.

57 Alundum abrasive combines the fast, cool cutting action typical of 38 Alundum abrasive with the durability and toughness of regular Alundum. Thus these new Norton wheels stay sharp longer and hold their shape better. Dressings are few and heavy cuts without burning are possible.

Your Norton abrasive engineer will be glad to tell you just where 57 Alundum grinding wheels will help you.

NORTON COMPANY
Worcester 6, Mass.
W-954

INTERNAL · CENTERLESS · CYLINDRICAL · SNAGGING

NORTON ABRASIVES

▲ Mention Item NED-1531 when writing ▲

ELECTRONIC TESTER

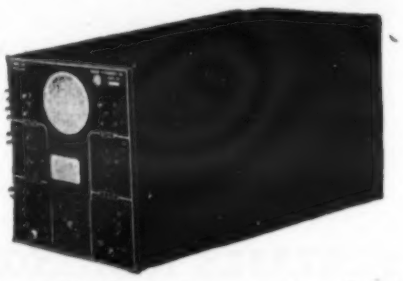
Designed to save engineering time in laboratory and to speed production testing, model 663A electronic multitester combines vacuum tube direct current volt-meter, alternating current voltmeter, ohmmeter and capacity meter in single instrument. Features include twenty-seven vacuum tube operated ranges, VR 105-30 voltage regulator tube, thirteen alternating and direct current voltage scales measuring from fraction of volt to 6000 volts, high voltage test leads, radio frequency lead, signal tracing probe, and resistance and capacity lead.

Wide scale on 4½-inch D'Arsonval microammeter permits easy reading. Meter burn-out affords protection. Included are pilot light indicator and matched pair of multiplier resistors which is accurate to 1 per cent. Welded steel case is thoroughly shielded and accommodates large capacity batteries. List price is $55.50. Made by **Radio City Products Co.**, 127 W. Twenty-sixth St., New York 1, N. Y.

▲ Mention Item NED-1532 when writing ▲

OSCILLOSCOPE

Designed to make measurements of higher frequency devices possible, model 556 oscilloscope is equipped with direct reading voltmeter for measuring input signal. Unit has 5-inch wide screen. It is made for work on higher frequencies as well as standard ones.



Sweep generator has frequency range of 1000 kilocycles, 20 cycles to 1 megacycle. Horizontal amplifier as well as vertical amplifier is practically flat to 2 megacycles. Z axis amplifier, which is useful up to 6 megacycles, permits blanking and marking. Special comparison voltmeter is incorporated to further increase usefulness of instrument and requires no additional equipment to determine value of signal. Deflecting plate connections are available at front panel. All controls are located at front panel and are conveniently grouped according to their function. Price of unit complete with tubes is $455. Made by **Reiner Electronics Co.**, 152 West Twenty-fifth St., New York 1, N. Y.

▲ Mention Item NED-1533 when writing ▲

DO YOU KNOW?

Over a century of engine building progress is depicted in new industrial sound motion picture entitled, "Continuous Performance," which is being scheduled for showing throughout industry. All phases of company's manufacturing progress and equipment developments are covered. Film released by The Cooper-Bessemer Corp., 3500 Sandusky St., Mount Vernon, O.

▲ Mention Item NED-1534 when writing ▲

SO THAT PLANES FIGHT SOONER

Ransome pavers are rushing airports along our battle fronts.

Paving is a shattering job. And frequent take-ups and tightening used to be part of paver maintenance.

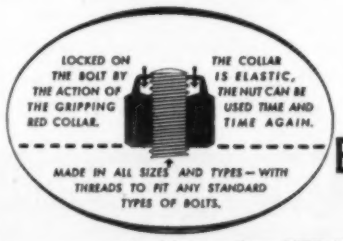
But no more! Not since Ransome began using Elastic Stop Nuts—the nuts that stay put.

Now the paver keeps on the go longer, and our planes fight sooner.

The reason Elastic Stop Nuts hold tight in spite of wracking vibrations lies in the elastic collar in their tops. This snuggles close around the bolt threads, grips them and prevents the nut from turning and loosening.

Countless fastening problems lie ahead in the coming days of peace. Many of them will be solved successfully with Elastic Stop Nuts.

If you are faced with a fastening problem, our engineers will gladly help you solve it and suggest the proper Elastic Stop Nut.



ESNA
TRADE MARK OF
ELASTIC STOP NUT CORPORATION OF AMERICA

ELASTIC STOP NUTS
Lock fast to make things last
UNION, N. J. AND LINCOLN, NEB.

▲ Mention Item NED-1535 when writing ▲

CHEVRON Packing

adjusts itself automatically

Because of its exclusive hinge-like construction Garlock CHEVRON Packing expands and contracts automatically as pressures increase or decrease.

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK

In Canada: The Garlock Packing Company of Canada Ltd., Montreal, Que.

GARLOCK

▲ Mention Item NED-1536 when writing ▲

Baer FIBRE FABRICATIONS

...for dielectric advantages!

The excellent electrical and mechanical characteristics of BAER phenol fibre and vulcanized fibre fabrications are both diversified and numerous. High dielectric strength, resistance to the deteriorating effects of electrical arcing, ability to withstand vibration, shock and impact are some of the advantages.

These factors, plus the BAER facilities for machining, stamping, punching, drilling, sawing, etc. to strict specifications, will efficiently and economically meet your fibre fabrication needs.

Write for Bulletin 132

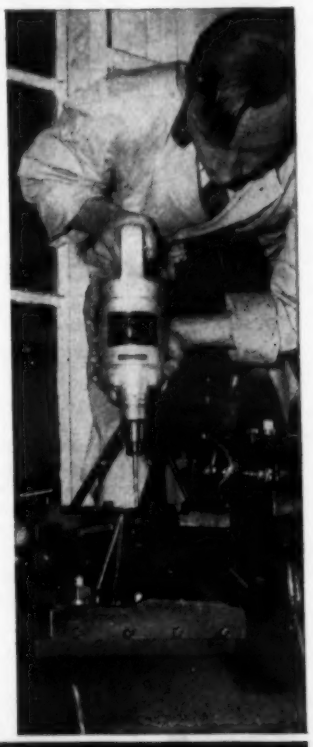
Specify BAER FOR WASHERS, STAMPINGS, GASKETS, SPECIAL SHAPES, TERMINAL BOARDS AND BUSHINGS

N. S. BAER COMPANY
CRAFTSMEN IN FIBRE FABRICATION
9-11 MONTGOMERY ST., HILLSIDE, NEW JERSEY

▲ Mention Item NED-1537 when writing ▲

POWERFUL HELP

for Tough Drilling Problems



Take a Stanley Drill anywhere to the job! Plug it in a light socket and it's ready for all the toughest work. Stanley Heavy-Duty Electric Drills are built to handle all drilling operations – and are used by steel workers, millwrights, mechanics, plant electricians and for production work in metal or woodworking plants.

Stanley Drills are available in capacities from ¼" to 1". Send for descriptive literature. Stanley Electric Tool Division, The Stanley Works, New Britain, Conn.

STANLEY
TRADE MARK

STANLEY ELECTRIC TOOLS

▲ Mention Item NED-1538 when writing ▲

New 16-page CATALOG on *Aircraft* RELAYS and ACCESSORIES

★ This 16-page catalog gives operating characteristics, dimensional drawings, wiring diagrams, and general construction information on aircraft relays, contactors, solenoids and aircraft accessories. Among the relays described are five variations of the versatile B-2A Relay built to A.A.F. specifications.

In addition, there are several general purpose aircraft-radio relays; a tiny midget relay weighing less than an ounce; heavy-weight and the new lightweight solenoid contactors (A.A.F. types A-3 B-4, B-5A, B-6A, B-7A); eight solenoids; six types of gun switch handles; a control wheel; propeller protractor; and a bomb and flare release.

This catalog is yours for the asking, when requested on your company letterhead.

Write Today

GUARDIAN ELECTRIC
1626-C W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN WAR INDUSTRY

▲ Mention Item NED-1540 when writing ▲

MODERNIZE with LIMA DRIVES

for LATHES, MILLING MACHINES, SHAPERS, BORING MILLS, GEAR HOBBERS and other machines requiring selective speeds. 1 to 25 hp.

Large enough to successfully serve you, yet small enough to give personal attention to your needs.

THE LIMA ELECTRIC MOTOR CO.
377 FINDLAY ROAD
LIMA, OHIO
REPRESENTATION IN MOST PRINCIPAL CITIES
LIMA GEARSHIFT DRIVES · LIMA ELECTRIC MOTORS
LIMA MAGNETIC POLISHING LATHES · LIMA PEDESTAL GRINDERS

▲ Mention Item NED-1541 when writing ▲

RIGHT OFF THE PRESS

The Story of Propellair's
VERTI-VENT
The Fully Automatic Weather-Tight VERTICAL EXHAUST HEAD

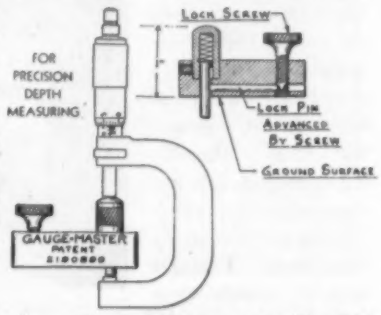
If you have a ventilating problem involving excess Heat, Fumes, Dust or Moisture, you should send for the story of Propellair's Verti-Vent. It tells how this highly efficient, power operated roof ventilator provides consistent and uninterrupted air displacement regardless of wind direction or velocity. Illustrates and explains various types of installations—gives you a clear picture of Verti-Vent construction and operation. Mail the coupon today.

PROPELLAIR, INC., Springfield, Ohio 10Q
Send the new story of Verti-Vent, Propellair's vertical exhaust head.
Name ..... *Position* .....
Firm Name .....
Street Address .....
City & State .....
My ventilating problem involves:
☐ Heat ☐ Fumes ☐ Moisture ☐ Dust

▲ Mention Item NED-1542 when writing ▲

MASTER GAGE

Depth and inside micrometer measurements can be made with this Gauge Master unit which is set with ordinary micrometer caliper. Unit consists of ½ x ½ x 2-inch hardened steel block, near one end of which is mounted hollow head containing coil spring. This spring actuates measuring pin extending through under surface of block and held in place by horizontal pin controlled by thumb lock screw.



In operation, measuring pin is forced down by spring until it seats itself. It is then locked and measured with micrometer caliper. Measuring pins are standard 5/32-inch drill rod. User can make longer pins for measuring any depth. Tool can be set to micrometer reading and used as limit gage. List price is $2.50. Made by L. H. Harvey Assoc., 254 First Ave. N., Minneapolis, Minn.

▲ Mention Item NED-1543 when writing ▲

CIRCUIT BREAKER CALCULATOR

Correct size of air circuit breakers for all industrial substation applications is readily determined through use of simplified Unit-Sub slide rule. Any user of rule can calculate interrupting capacity of 600-volt class air circuit breakers needed for control of power. Its use permits proper applications of breakers.

Rule is constructed from standard A.I.E.E. formulas for determining short circuit currents and takes into consideration all necessary factors such as motor load and direct current component. Device can also be used to check circuit breakers on any system. It applies to direct connected as well as cascaded breakers. Data is also available in Nomogram form. Available free from **Allis-Chalmers Mfg. Co.**, 6900 Norman St., Milwaukee 1, Wis.

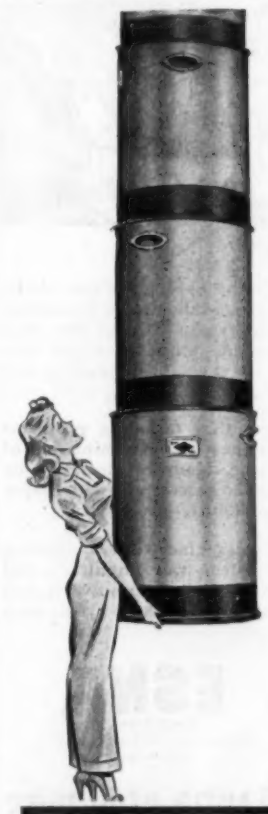
▲ Mention Item NED-1544 when writing ▲

PORTABLE HEATING TANKS

Electrically operated, complete line of special heating tanks is designed for wide range of processing operations. Illustrated model No. 20 is of portable type and consists of well insulated heating tank equipped with electric heating elements, motor, pump for fluid circulating purposes, thermostats for maintaining fluid temperatures within certain limits, valves and all electrical controls. Assembly is mounted on casters.

Other units include stationary types which can be furnished with or without mechanical agitation. Made by **Youngstown Miller Co.**, 1638 Hayes Ave., Sandusky, O.

▲ Mention Item NED-1545 when writing ▲



In Balance!

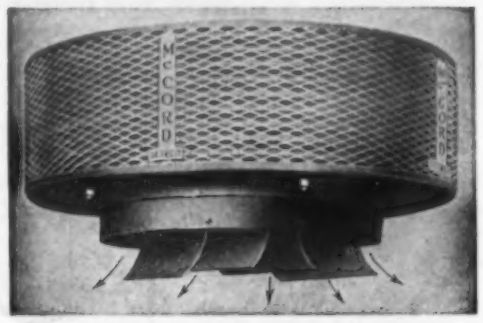
Correct balance means less effort for workers in moving materials and parts from here to there.

The combination of correct balance, light weight and sturdy construction . . . found in every DIAMOND FIBRE box, barrel, can, tray, basket or truck . . . insures you of more value per dollar invested when you use DIAMOND FIBRE material-handling Hollow Ware. Send today for complete Catalog HW 1.

C-D DIAMOND FIBRE HOLLOW WARE
CONTINENTAL-DIAMOND FIBRE CO., NEWARK, DEL.

▲ Mention Item NED-1546 when writing ▲

A UNIT HEATER FOR HIGH AND WIDE BUILDINGS

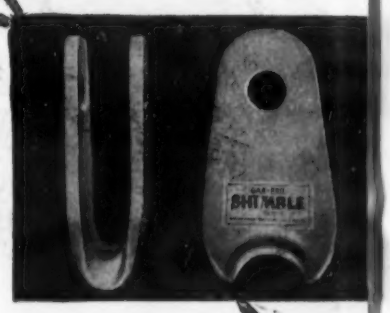


These heaters solve the problem of heating high and wide buildings, such as warehouses, factories, hangars, and garages. The effective distribution of heat from these units permits each heater to adequately service a large area. Every improvement that engineers and the experience of many users is incorporated in the 1942 models. The circular construction is particularly adapted to the spiral fin tube construction because the shape and design of the fin creates an air turbulence without undue restrictions. Fins and tubes are metallically bonded making a highly effective permanent union that maintains contact at high temperatures, providing extra good heat transfer capacity. Due to the careful design, a new degree of quietness has been attained with the result these heaters are being used on installations not previously considered adaptable. New catalog includes complete specifications. Write: **McCord Radiator & Mfg. Co.**, Detroit, Michigan. —Advt.

▲ Mention Item NED-1547 when writing ▲

THE NEW GAR-BRO SHIMBLE
COPYRIGHTED—PATENT PENDING

NOW MADE IN REGULAR PATTERN



● LIKE the Heavy Pattern Gar-Bro Shimble, the Regular Pattern is forged from mild steel bars to provide rigid support for wire rope in correct, non-collapsible contour, thereby insuring better rope protection, greater strength for direct pull, and adaptability in use. This fitting takes the place of two or three fittings ordinarily used, namely thimble, shackle or socket, and a clevis. Regular Pattern "Standard" is the shackle equivalent. Regular Pattern Style "A" is the socket equivalent. They provide for the safe strength of rope in general applications. Furnished painted or galvanized, with cottered pin or screw pin, closed or open type. Made in all rope sizes ⅛"-1⅝". Ask for Bulletin No. 72.

GAR-BRO GARLINGHOUSE BROTHERS
MANUFACTURERS
2416 E. 16th St. • Los Angeles 21, California

▲ Mention Item NED-1548 when writing ▲

From Parts Prints to Press in 8 Weeks
—No small task in these days of priorities, delays and last minute changes. Barth of Cleveland gives high credit to

"HARDSTEEL" DRILLS

which enabled them, on the signal equipment dies illustrated, to save many man hours and to keep an important delivery date. « « «

With a "HARDSTEEL" Drill in an ordinary drill press and following simple instructions regarding speed and pressure, any mechanic can easily drill clean holes through steel hardened by any process —40 Rockwell "C" or harder.

A time saver when last minute emergency changes come through on hardened dies and parts. And the only way to assure matching of hardened parts at assembly—drill after hardening.

Used throughout industry for parts recovery and for production work—made in all sizes ⅛" to 1".

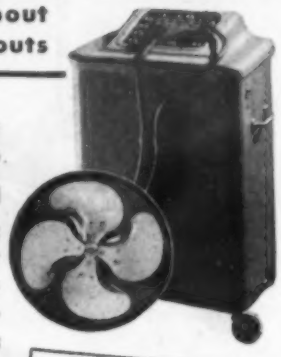
BLACK DRILL CO. • 1400 East 222nd Street, Cleveland 17, Ohio
"YOU HARDEN IT... WE'LL DRILL IT" with HARDSTEEL
Complete information and practical operating suggestions in the "HARDSTEEL" Operating Manual. *Copy free on request.*

"HARDSTEEL"
DRILLS · REAMERS · TOOL BITS · SPECIAL TOOLS

▲ Mention Item NED-1549 when writing ▲

WELD 24 HOURS A DAY

And Don't Worry About Heat Stress or Burnouts



NEW ERGOLYTE A.C. ARC WELDER COOLED BY POWERFUL FAN

Here's an A.C. Arc Welder made to order for war welding. All the regular production-proved features *plus* cooling from a powerful built-in fan. Extra heavy insulation. No time out needed now for "cooling down". Write for information today.

FREE

POSTER FOR YOUR SHOP

Suggestions for better, faster, safer welding. Simply write in on your letterhead and say how many copies you can use.

ERGOLYTE MANUFACTURING COMPANY
3627 NORTH LAWRENCE STREET, PHILADELPHIA, PENNA.

▲ Mention Item NED-1550 when writing ▲

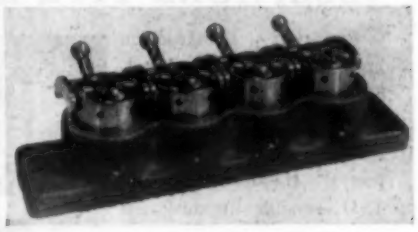
GASOLINE ENGINE

Featuring valve-in-head design, model D140 four cylinder industrial engine has piston displacement of 140 cubic inches and develops 33 horsepower at 2400 revolutions per minute. Adaptable particularly for heavy duty industrial applications, it is claimed to be economical to operate, easy to maintain and designed for continuous service. Wet cylinder sleeves are additional features.

Drop forged, counterweighted crankshaft has extra large bearings. Vertical magneto, drop forged connecting rods, precision bearings, oil bath cleaner, full pressure lubrication, valve seat inserts and conveniently located controls are standard. Completely housed, engine forms compact power unit for stationary or mobile applications. Made by **Le Roi Co.**, 1706 S. Sixty-eighth St., Milwaukee 14, Wis.

▲ Mention Item NED-1553 when writing ▲

MULTIPLE HOLDING FIXTURE



Numerous set-ups which boost output of precision machining operations are possible with this multiple collet-holding fixture when used on milling machine. Fixture consists of four collet units in either 1 or 2-inch size. They may be mounted either parallel or at right angles to spindle. Two, three or four collets can be used, or in multiples thereof.

Several fixtures can be used simultaneously, depending upon length of table. Center-to-center of collets is 3½ inches on 1-inch fixtures and 5½ inches on 2-inch units. Two fixtures may be staggered, reducing these distances to 1¾ and 2¾ inches, respectively. Made by **Zagar Tool Inc.**, 23880 Lakeland Blvd., Cleveland 17, O.

▲ Mention Item NED-1554 when writing ▲

HAND WIRE STRIPPER

Of improved design, this Speedex wire stripper now includes "stay-open" feature which is claimed to be of advantage when stripping insulation from fine stranded wires. Jaws of tool are held open until wire is removed, thus preventing damage to the exposed wire. Handle design has been changed to facilitate use by women operators with small hands. Tool will remove insulation without crushing from all types of solid and stranded wire in sizes ranging from No. 8 to No. 30. It can also be used to cut wire. List price is $8. Made by **Wood Specialty Mfg. Co.**, 919 Taylor Ave., Rockford, Ill.

▲ Mention Item NED-1555 when writing ▲

Increases Efficiency As Much as 32%

● See U. S. Dept. of Labor Bulletin No. 10. Any man or woman, tall or short, light or heavy, can instantly adjust a Kewaunee AA Chair or Stool to exactly the right height for greatest comfort and efficiency. Just lift the seat—that's all—a matter of seconds—without use of any tool. Adjustable backrest minimizes fatigue and insures greater production.

Kewaunee
AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

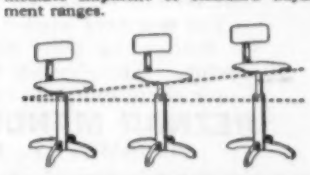
Immediate Shipments

Sturdily built of selected hard wood with hickory support posts. "Ton-tested" for strength, but light in weight and easy to handle. Warehouse stock assures immediate shipment of standard adjustment ranges.

3 Height Ranges

18" to 22" . . . 22" to 28" . . . 28" to 36". Other height ranges obtainable if needed. Shaped ply-wood seat, adjustable backrest and adjustable footrest.

C. G. Campbell, *Pres.*



KEWAUNEE MFG. CO., ADRIAN, MICH.

▲ Mention Item NED-1557 when writing ▲

Northern HI-LIFT ELECTRIC HOISTS

168-Hour Week Workers

They stay on the job because they have the strength and construction quality. One piece welded frames—turned and ground shafts—large size roller bearings—machine cut heat treated gearing—splash lubrication. All parts readily accessible for maintenance that usually isn't needed.

Hi-Lift feature makes better use of headroom—capacities 1000 lbs. to 15 tons.

Low Headroom

Write for Literature

NORTHERN ENGINEERING WORKS, 2603 Atwater St., Detroit, Mich.

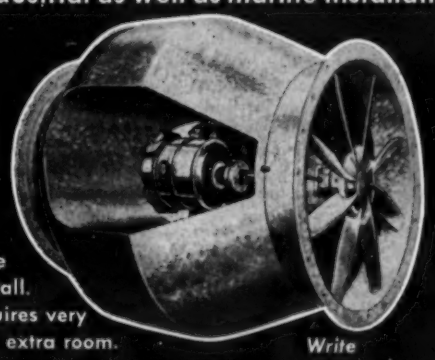
CRANES *Northern* HOISTS

▲ Mention Item NED-1551 when writing ▲

REMOVE HIGH TEMPERATURE AND CORROSIVE FUMES WITH

International DUCT BOOSTERS

Can be installed right in the duct, in any position—horizontal or vertical. Requires no platform for support. Eliminates 90° change in gas direction. Saves burned out motors in industrial as well as marine installations.

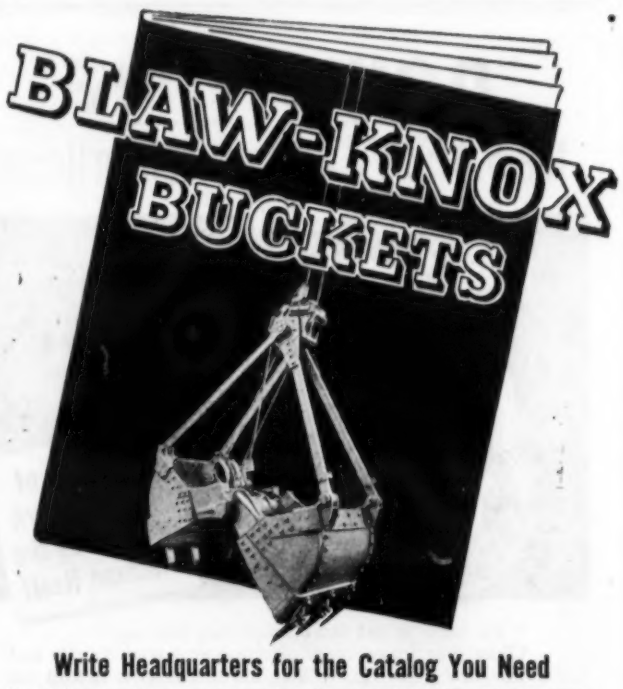


Simple to install. Requires very little extra room.

Write

INTERNATIONAL ENGINEERING, INC.
DAYTON, OHIO

▲ Mention Item NED-1552 when writing ▲



Write Headquarters for the Catalog You Need

No. 1586—Blaw-Knox Concrete Buckets.
No. 1606—Blaw-Knox Buckets for Contractors.
No. 1696—Blaw-Knox Buckets for Single Drum Hoists for use on Railroads, Mills, Foundries, Etc.
No. 1745—Blaw-Knox Buckets for "Burtoning" handling Nitrates, Grain, Potash, Etc.
No. 1757—Blaw-Knox 2 Line Lever Arm Buckets for Rehandling, Barge Cleanup, General Purpose, Hard Digging, Dredging.
No. 1865—Blaw-Knox 4 Rope Buckets for Coal, Ore and Cleanup.

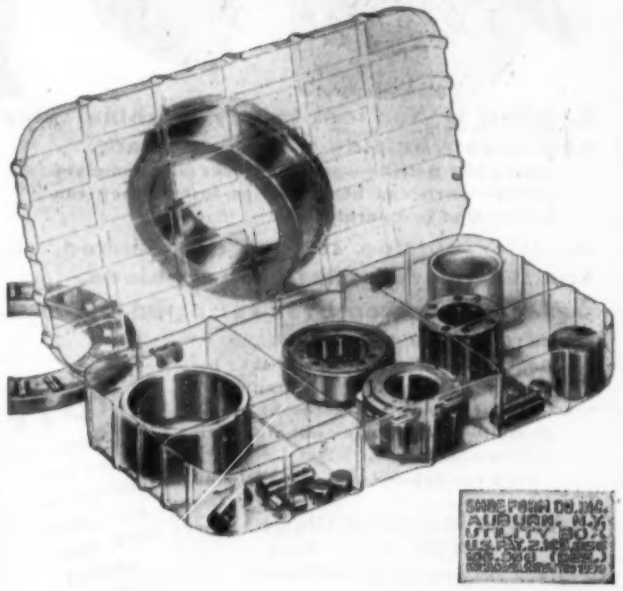
BLAW-KNOX DIVISION of Blaw-Knox Company
2068 Farmers' Bank Bldg., Pittsburgh, Pa.

▲ Mention Item NED-1556 when writing ▲

Pyra-Shell

Reg. U. S. Pat. Off.

TRANSPARENT UTILITY BOXES



DELICATELY ADJUSTED assemblies or parts that must be kept free from dust, grit and grime while on the assembly line, in repair departments or stock rooms, have the utmost protection in these transparent utility boxes. The contents of each box are quickly and easily seen by looking through the cover, the sides or the ends. There are no dark corners to cause fumbling and delay when searching for needed parts or units.

Pyra-Shell Boxes are exceptionally light in weight but their patented construction gives them great strength and a sturdiness that assures long wear. This strength makes them ideal for small parts storage.

There are many standard sizes, styles and compartment arrangements from which to select a box for your use. If necessary, however, a special box can be designed to meet your particular needs.

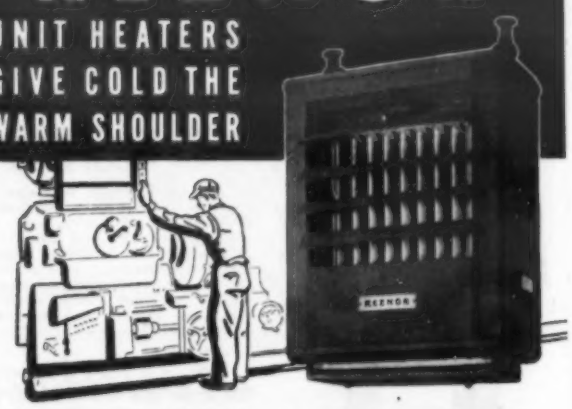
Write for folder illustrating standard styles. Address—Utility Box Dept. D

SHOE FORM CO. INC.
AUBURN, N. Y.

▲ Mention Item NED-1558 when writing ▲

REZNOR

UNIT HEATERS GIVE COLD THE WARM SHOULDER



Inadequate heating gives the will-of-the-wisp drafts a chance to play leap-frog all over your plant. And the industrial records show that they have been having quite a game with the nation's war workers.

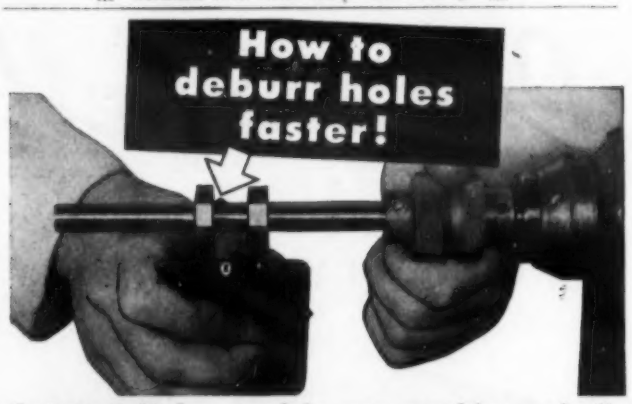
But you can eliminate all the drafts in your plant promptly, efficiently, and forever by placing Reznor Unit Heaters in the heart of your cold areas.

You may need auxiliary heat in a corner, down on the floor, or up above the machines. Wherever the location, easy-to-install Reznor Unit Heaters will deliver clean, automatic heat in just the right volume.

REZNOR MANUFACTURING CO.
101 JAMES ST., MERCER, PENNA.

"GAS HEATERS EXCLUSIVELY SINCE 1888"

▲ Mention Item NED-1559 when writing ▲



1. Insert Nobur tool in any machine spindle and deburr outside surface of work.
Works like a drill—operator works with complete safety—parts can be burred as fast as they can be handled by operator.

2. After outside surface is deburred, slide knurled sleeve back to retract blade.

3. Move work on over retracted blade and deburr inside surface.
Double-edged cutting blade thus instantly removes burrs around holes in flat or curved surfaces of single or multi-walled parts—smoothly and accurately.

Send for deburring folder. Write

NOTE
All Nobur tools are now furnished with pilot shafts hard chrome plated!

NOBUR MANUFACTURING CO.
906 No. Orange Drive
Los Angeles 38, California

▲ Mention Item NED-1560 when writing ▲

▲ Mention Item NED-1561 when writing ▲

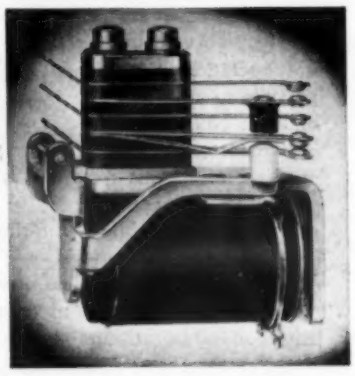
LIFT TRUCK

Convenient for use in narrow aisles and crowded quarters of factory or warehouse where loads have to be carried or stacked, Hyster "20" lift truck has capacity of 2000 pounds. Pneumatic tires practically double operating speed, permitting faster starting and stopping, smoother travel over rough ground or floor obstructions such as cleats and car tracks, better traction for going up ramps and starting and stopping on wet or greasy floors.

Truck is gasoline powered fork type unit with 25 horsepower, four cylinder, V-type motor equipped with spark arresting mufflers. High degree of maneuverability is provided by 66-inch turning radius made possible by design of combined counterweight and trunion wheel. Truck has wheel base of 45 inches with overall length, not including load arms, of 71 inches and overall width of 36 inches. Made by **Willamette Hyster Co.**, 2906 N. E. Clackamas St., Portland 8, Ore.

▲ Mention Item NED-1562 when writing ▲

TELEPHONE TYPE RELAY



Precision construction and use of newly developed materials assures dependable performance of this line of telephone type relays. Illustrated model TSU, specifically designed for crystal switching, is suitable for various high frequency, plate circuit and general utility applications. Contact arrangements can be supplied normally open, normally closed, single-pole double-throw or in any two combinations. Contacts will carry 2 amperes at 24 volts direct current or 115 volts alternating current non-inductive load. Coil resistances are available from fraction of ohm to 5000 ohms.

Relays will withstand vibrations up to 10 times gravity and meet all standard salt spray and humidity specifications. Model TSL is similar to above. Both are available with ceramic or bakelite insulation. Overall dimensions are 1¼ inches long, ¾ inch deep and 1½ inches high. Made by **Allied Control Co.**, Dept. T., 2 East End Ave., New York 21, N. Y.

▲ Mention Item NED-1563 when writing ▲

DO YOU KNOW?

Bending and stretching of aircraft metal parts are performed at previously impossible speeds on newly developed Roto-Stretcher. Parts are made without wrinkles because of controlled force machine exerts. It is being used to form parts with contours up to 360 degrees, an operation thought impossible by stretch or bends methods. Developed by Goodyear Aircraft Corp., Akron, O.

▲ Mention Item NED-1564 when writing ▲

"DOWN TIME" the SABOTEUR of Machine Hours

• It's hard to get more machines, you say? Okay, then make every machine now work harder and produce more. How? Well, the first step is to find out if any precious time is now being wasted by machines *standing idle* at odd moments. And the way to do *that* is to clamp a little SERVIS RECORDER on each one of your machines. Then you'll get the whole story—see chart above. Write for our folder—"A Busy Plant." The Service Recorder Co., 1375 Euclid Ave., Cleveland, 15, Ohio

The Servis Recorder
SHOWS UP ALL IDLE TIME!

▲ Mention Item NED-1565 when writing ▲

it's a tough grind

What a load! Reminds us of the job grinder-men have to do. But the going is easier when Abrasive RED BAND Diamond Tools are doing the dressing. And Abrasive's exclusive "Oxide-Free Process" assures *useful* service from even the final fraction of each diamond . . . providing *better* work, *more* work with fewer set-ups.

ABRASIVE DRESSING TOOL CO. Detroit, Michigan

THE CROWN JEWELS OF INDUSTRY

Write for Catalog

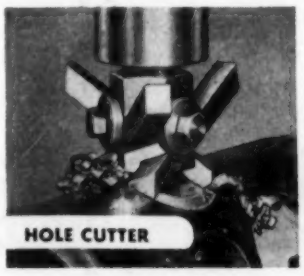
THIRD GENERATION OF DIAMOND EXPERIENCE

▲ Mention Item NED-1566 when writing ▲

CLARK CUTTING TOOLS

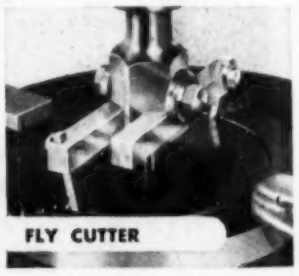
slash tool inventories . . . save tooling costs

It's your job to use the least possible labor, conserve tool inventories, get war contracts out faster . . . and our job to provide the tools you need. These demands are *fully met* with the revolutionary, *adjustable* Clark Cutting Tools that are speeding production, reducing tool requirements, and slashing man-and-machine hours in thousands of plants throughout the nation . . . and will bring the same economies to post-war work. The exclusive *adjustable radius* feature of Clark hole cutters, fly cutters, surface facers and counterbores eliminates the need to stock hundreds of fixed-radius tools. Here's proof: If you purchased the complete set of nine Clark counterbores with a cutting range of ¼" to 5½" it would only cost you $295.00 whereas hundreds of fixed-radius cutters would be necessary to cover the same over-all diameters and the cost would run into thousands of dollars. These are but *two reasons* why you need Clark Cutting Tools—order them today from your jobber . . .



EXAMPLE NO. 1

Clark Adjustable 3-Blade Hole Cutters make accurate, smooth holes in flat or curved metal, plastics, wood, transite. 7 sizes cut ⅝" to 5", up to 1" thick. No reaming or deburring. Fewer operations are required.



EXAMPLE NO. 2

Clark Adjustable 2-Blade Fly Cutters. 2 sizes cut holes or discs 2½" to 10", up to 1" thick. Pitched blades cut true, relieve chatter. Other models cut gaskets, rings, discs from live rubber, problem materials.

EXAMPLE NO. 3

Clark Adjustable 3-Blade Facing Tools. 4 sizes cover all fractional diameters, 1¼" to 5", do the work of End, Shell and Slab Mills, Inserted Tooth Cutters. Fit all machines. Tools available with all types of blades, including carbide tips.

EXAMPLE NO. 4

A real tool bit conserver! Mechanic's MODEL A and Heavy Duty MODEL B for accuracy, uniformity in grinding *both* National 60° and Acme 29° tool bits. Both models handle bits for use in Armstrong Tool Holders. *SPECIAL MODEL C* for grinding Clark Hole Cutter blades.

SEE YOUR JOBBER
or write for Bulletin NED-3

In Canada: DOMINION BEARINGS, LTD., Toronto, Montreal, Winnipeg
Export: THE AMERICAN STEEL EXPORT COMPANY, INC., New York, Los Angeles

Robert H. Clark Company
9330 Santa Monica Boulevard • Beverly Hills, California

▲ Mention Item NED-1567 when writing ▲

NON-ABRASIVE FLOOR CLEANER . . .

Absorbo's sponge-like granules will not mar machinery.

ABSORBO, a newly developed dry compound, removes oil and grease accumulations from floors of any type—wood, metal, concrete or linoleum. It absorbs up to 50% of its weight, quickly and easily. Composed of an inert, odorless material that is non-abrasive, it is harmless to skin, clothes, metal surfaces and flooring.

ABSORBO can be sprinkled on floors subject to recurring oil or grease accumulations, and allowed to remain, or, where the condition is temporary, swept up after a few moments. In either case, the floor will be dry and footsure. ABSORBO is approved by the Underwriters' Laboratories, as a Class 1 non-combustible. Even when completely saturated with oil, it resists burning and prevents fire from spreading.

Trial 50 lb. bag $2.75 F.O.B. Newark, with unconditional money-back guarantee. Substantially reduced prices on quantity orders. Territories open for distributors. Write: **FIDELITY CHEMICAL PRODUCTS CORP.**, Dept. B6, 430 Riverside Avenue, Newark, 4, N. J. —Advt.

▲ Mention Item NED-1568 when writing ▲

SPRACO NOZZLES

For industrial processes involving washing, cooling, spraying, scrubbing, and quenching, Spraco Nozzles are available in a complete range of types, sizes, and capacities. Standard materials are cast iron, brass, and bronze, but nozzles for use with corrosive liquids and gases can be supplied from any machinable alloy (with suitable priorities).

Write to

SPRAY ENGINEERING CO.
106 Central Street, Somerville, Mass.

▲ Mention Item NED-1569 when writing ▲

CLECO PRODUCTION *Keeps Pace* with the Aircraft Industry's Demands!

☆ There are dozens of models and sizes of Cleco aircraft riveters, many styles with handles made of steel or aluminum. These tools strike accurately controlled blows, causing the rivet metal to flow uniformly without structural deterioration. Their use insures tight rivets, and avoids damage to the metal being riveted.

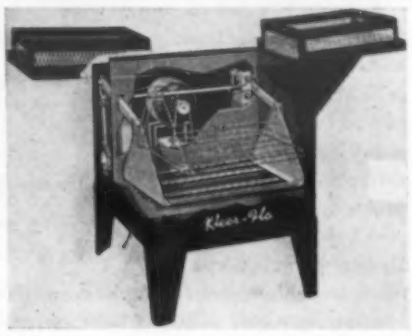
D2-BW Light Riveter

Write for Bulletin 85

THE CLEVELAND PNEUMATIC TOOL CO.
3781 East 77th Street ★ CLEVELAND 5, OHIO
BRANCH OFFICES IN ALL PRINCIPAL CITIES

▲ Mention Item NED-1570 when writing ▲

PARTS CLEANING MACHINE



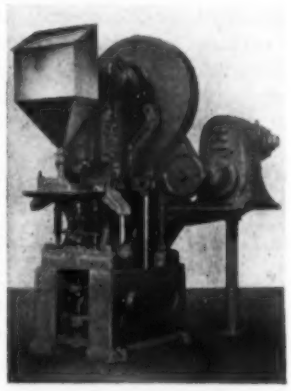
Soluble oils, cutting oils and other materials are removed from parts readily with this Kleer-Flo agitating power parts cleaner which may be used for any type of cold washing. Its use eliminates need for manual brushing and cleaning of parts. In addition to applications for cleaning new parts as they come off automatic machines, it may be used for such special purposes as decarburizing carburetors, pistons and valves in aircraft and automotive maintenance applications.

Vertical stroke of 4½ inches fifty-eight times per minute creates washing pressure which flushes off oils, chips, grit and other foreign material. Standard solvents may be used. Power is provided by ¼-horsepower single phase 110-220 volt alternating current motor.

Parts are placed in mesh baskets for convenience in handling. Illustration shows dual drain boards in use. This effects considerable savings in solvents. Capacity of model PW100 shown is 60 pounds per washing cycle, which may be performed in approximately 1½ minutes. Distributed by **Kleer-Flo Distributors, Inc.**, 250 W. Fifty-seventh St., New York, N. Y.

▲ Mention Item NED-1571 when writing ▲

AUTOMATIC PRESS



Developed especially for production of powdered metal parts and Steatite or other dry-mix ceramics in which close accuracy in dimensions and exact control of density are primary requirements, model R-4 press is completely automatic. High production rates are obtainable. It is recommended also for debulking chemicals, compressing food specialties and similar purposes. (*Editor's Note: This description appeared Item NED-1012, Feb. 1944 wrongly illustrated.*)

Pieces up to 3 inches in diameter and with die fill of 2⅝ inches are compressed at rates of 15 to 45 per minute. Pressures of up to 20 tons are applied from both top and bottom. Pressure adjustments may be made while press is operating. This permits control of density of piece with exactness to assure uniform electrical and mechanical characteristics. For example, either desired porosity in oil impregnated bearings or extreme density needed for carbide tool bits is obtainable.

Features include heavy construction, separate ejection and compression levers, screw adjustment for compression, independent ejection cam, twin disc clutch and combined brake that instantly starts and stops machine even under full compression load, variable speed drive to obtain maximum production with materials and parts of varying characteristics and size, and adjustable gibs to maintain close accuracy in punch and die alignment. Made by **F. J. Stokes Machine Co.**, 5964 Tabor Rd., Olney P. O., Philadelphia 20, Pa.

▲ Mention Item NED-1572 when writing ▲

YOU CAN'T BEAT THIS SCREWDRIVER

24 Hour Production Schedules Maintained

THINK OF IT

Drives No. 2, 4 or 6 screws, from 3/16" to ¾" long, at one second each.

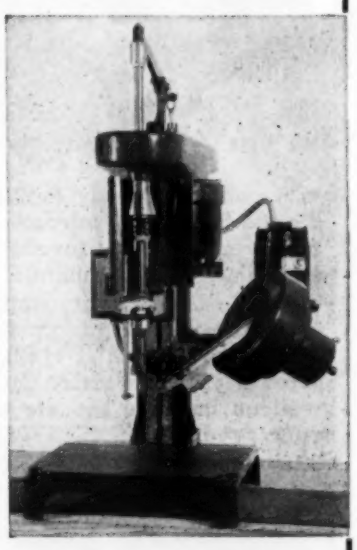
•

ALL SCREWS DRIVEN TO A UNIFORM TENSION

No Marring of Heads

•

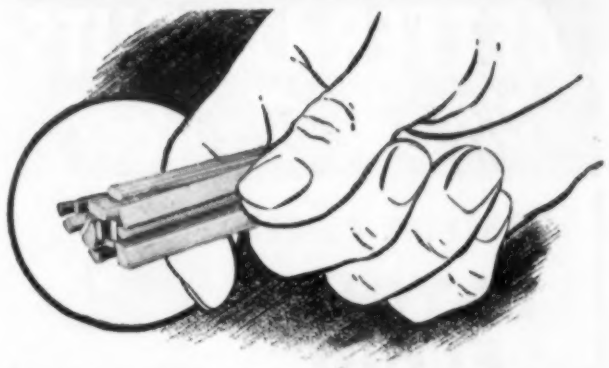
Send Sample Assemblies For Estimates.



DETROIT POWER SCREWDRIVER CO.
2819 West Fort Street **Detroit 16, Michigan**

▲ Mention Item NED-1573 when writing ▲

▲ Mention Item NED-1574 when writing ▲



PAGE *Stainless Steel* WIRE

• If you are planning to use Stainless Steel Wire after re-conversion—**GET IN TOUCH WITH PAGE.**

Remember, wire has *always* been the business of **PAGE**. And, even in the earlier days of Stainless Steel, **PAGE** as a supplier of Stainless Wire learned much of its working qualities.

Then came the wide range of **PAGE** Shaped Wires—Hexagons, Octagons,

Triangles, Keystones, Ovals, Half-rounds—in section areas to .250 sq. inches, and Rectangles and Flats in widths up to ⅜".

All this activity brought more knowledge of the workability of Stainless Steel.

Then came 1941—and war—with a tremendous increase in the use of Stainless Steel that has made this entire organization perfectly at home with this product.

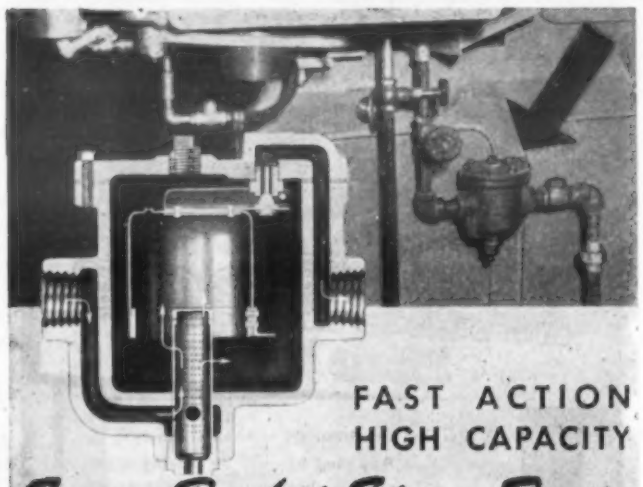
So, again! If you are planning to use Stainless Steel Wire after re-conversion, **GET IN TOUCH WITH PAGE!**

PAGE STEEL AND WIRE DIVISION
Monessen, Pa., Atlanta, Chicago, Denver, Los Angeles New York, Pittsburgh, Portland, San Francisco

In Business for Your Safety

ACCO
AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

▲ Mention Item NED-1575 when writing ▲



FAST ACTION
HIGH CAPACITY

Sarco Bucket Steam Traps

This trap removes condensate from steam supply lines to pumps, engines, turbines and separators and is preferred by laundries, textile, and plastic industries. It can be adapted to the highest commercial steam pressures and temperatures and can be inspected without disturbing pipe connections. Integral strainer protects the mechanism. Sizes ½ to 2", pressures up to 900 lbs. Ask for Catalog No. 350.

SARCO SAVES STEAM — SARCO COMPANY, INC. 475 Fifth Avenue, New York 17, N. Y. SARCO CANADA, LTD., 85 Richmond St. W., TORONTO, ONT. 183

▲ Mention Item NED-1579 when writing ▲

BETTER LAYOUTS *Made Faster!*

with DAYTON ROGERS' LAYOUT FLUID

Brush on Die Blue. DRIES INSTANTLY!

This deep Die Blue Layout Fluid saves polishing and drying time, makes an easy-to-see layout that relieves eye-strain. Better layouts mean improved accuracy and fewer rejects. Also used for checking sample parts and periodic piece inspection on production runs.

PRICES—Handy 4 oz. Brush-in-Can, 40c. Pint, 60c. Quart, 90c. Gallon, $2.50. Circular on request.

Scribed Lines SHOW CLEARLY!

Accurate Work Done Faster and Easier! LESS WASTE!

DAYTON ROGERS MANUFACTURING CO. 2837 12th Ave. S., Minneapolis 7, Minn.

▲ Mention Item NED-1580 when writing ▲

The Answers to your Motor Problems!

FULLY DESCRIBED IN A NEW, FREE BOOKLET

SHIPMENT NOW! Ample stock on all types of integral motors on hand as this goes to press. Wire or phone your inquiry.

Read the interesting, 20-page story of R & M Uni-Shell Integral Horsepower Motors—the only complete line in which all types in any one frame size are interchangeable and similar in appearance. Length and diameter of the shell, head fit, bolt circle holes, base and conduit mounting are identical for all. Where one type can be mounted, so can any.

MAIL THIS COUPON!

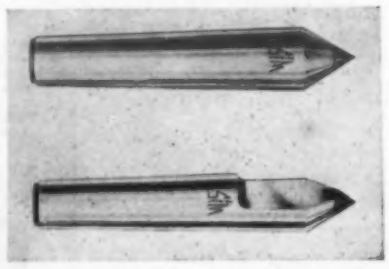
ROBBINS & MYERS, INC.
Motor Division, Springfield, Ohio

Send me the free book about Uni-Shell Integral Horsepower Motors.

Name ..... Dept. .....
Firm .....
Street .....
City & State .....

▲ Mention Item NED-1581 when writing ▲

CARBIDE TIPPED CENTERS

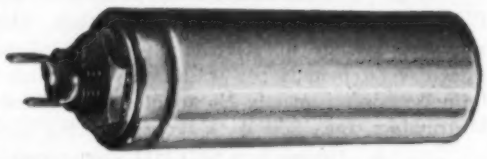


Long service life of these lathe centers and half centers is achieved by extension of carbide insert into shank of tool. This extension is equal approximately to exposed portion of tip. Design permits extra regrinds before need for replacement, should bearing surface become damaged. Centers have concentricity of 0.0002 inch and accuracy is held for long time because of wear resistance of carbide. They are stocked in standard tapers. Made by **Wendt-Sonis Co.**, 1000 Collier St., Hannibal, Mo.

▲ Mention Item NED-1582 when writing ▲

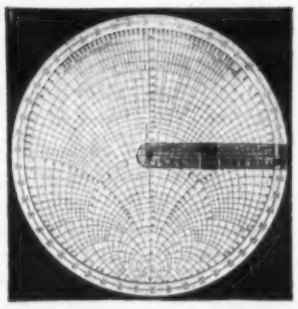
OIL TYPE CAPACITORS

Designed as standard components to replace many similar types of special capacitors used in production of war equipment, type EC oil Capacitrons are available in several capacity ranges with direct current voltage ratings from 600 to 1500 volts, to meet U. S. Signal Corps and Navy specifications. Units are locked on chassis by means of solid nut and lock washer through single hole to clear ¾-inch x 16 threaded Bakelite neck. This neck is lock-spun into extruded insulated metal container, making possible hermetic seal. Grounding of either insulated terminal is accomplished readily with special lug. Dimension of 3 and 4 microfarad sizes are 1½ inches in diameter by 4½ inches in height. Deliveries can be made from stock in some sizes. Made by **Capacitrons Inc.**, 318 W. Schiller St., Chicago 10, Ill.



▲ Mention Item NED-1583 when writing ▲

TRANSMISSION CALCULATOR



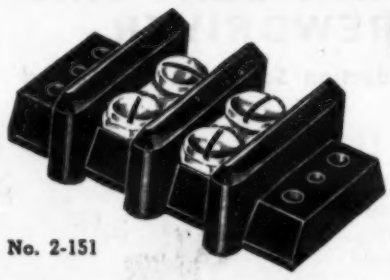
Solutions to radio transmission line problems are readily obtained with this calculator. It is fundamentally a mechanical arrangement of impedance coordinate system with respect to set of movable scales. It portrays relationship of impedance at any point along uniform open wire or coaxial transmission line to impedance at any other point, as well as to several other electrical parameters.

These other parameters are plotted as scales along radial arm and around rim of calculator, both of which are independently adjustable with respect to main impedance coordinates. All parameters are related to one another and specific solutions are obtainable through use of adjustable cross-hair index.

Calculator is 9 inches in diameter. It is easy to use and lists for $5. Made by **The Emeloid Co.**, 287 Laurel Ave., Arlington, N. J.

▲ Mention Item NED-1584 when writing ▲

JONES BARRIER STRIPS



Solve Most Terminal Problems

No. 2-151

• A compact sturdy terminal strip with Bakelite Barriers that provide maximum metal to metal spacing. Prevent direct shorts from frayed wires at terminals.

6 SIZES—Cover every requirement. From 3/4" wide and 13/32" high with 5-40 screws to 2-1/2" wide and 1-1/8" high with 1/4"-28 screws. Jones Barrier Strips will simplify as well as improve the electrical connections of your products.

Three lines of Jones Multi-Circuit Plugs and Sockets fulfill every connection requirement. Hundreds of standard terminals.

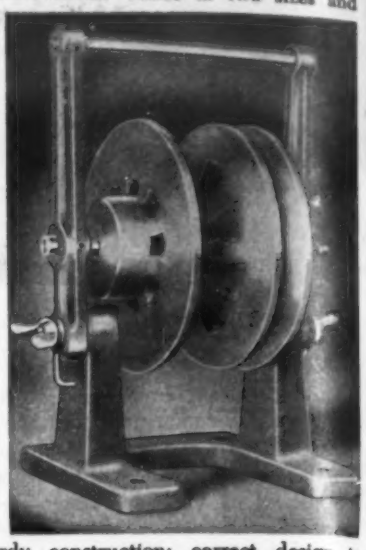
Write today for catalog listing complete line of Jones Electrical Connecting Devices.

HOWARD B. JONES
2460 West George Street, Chicago 18, Ill.

▲ Mention Item NED-1585 when writing ▲

VARIABLE SPEED TRANSMISSIONS

Completely new and thoroughly proven are Toledo variable speed transmissions with ratios of from 1 to 1 to 10 to 1, for fractional to 3.5 horsepower drives. Made in two sizes and four forms, they are low in price and deliver positive speed control.



Available either completely assembled, with or without belts; with a thrust bearing for vertical mounting; or wheel assembly only for special machine design applications.

Field of application is practically unlimited. They are being applied to machine tools and other drives in numerous industries. They may be mounted in any position for either straight line or angle drive.

Important features include: ease of installation; compact size; sturdy construction; correct design to eliminate belt wear; infinite speed selection of stepless speed changes; speed change without stopping; oversize bearings; interchangeable parts; noiseless operation; and can be used with any size motor.

If you have a variable speed requirement, for either a complete variable transmission unit or variable wheel assembly only, let us show you how you can improve your product at a considerable saving. **The Toledo Timer Co.**, 2224 Albion St., Toledo, O. —Advt.

▲ Mention Item NED-1586 when writing ▲

ANOTHER SPECIAL BY PROGRESSIVE

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

Ask for design help. Item illustrated is a "special," of which no samples are available.

Special heads, threads, and finishes—on fastenings of any metal or alloy adapted to cold-upset—are Progressive's specialty. Weekly output: 25,000,000.

The PROGRESSIVE MFG. CO.
TORRINGTON 46 NORWOOD ST. CONNECTICUT

▲ Mention Item NED-1587 when writing ▲

NO WIRES—NO HEATING—NO OPERATING COSTS

Permanent Magnet Type Chucks are ready for instant use and on any machine of suitable size—no electrical connections of any kind are needed—chucks have strong holding power. Send for complete catalog.

BROWN & SHARPE MFG. CO.
Providence, R. I., U. S. A.

RECTANGULAR MODELS
5" x 10"
6" x 18"
8" x 24"
12" x 36"
ROTARY MODEL
9" Diam.

DELIVERIES ARE GOOD ON SOME SIZES
For sale only in the U. S. A. and its Territories and Canada

BROWN & SHARPE
MAGNETIC CHUCKS
PERMANENT MAGNET TYPE

▲ Mention Item NED-1588 when writing ▲

Cut Air Tool Maintenance!

Moisture and dirt in compressed air lines does more damage to air tools, such as impact wrenches, grinders, tampers and chippers, than mishandling or actual long hour use.

Aridifiers remove all contamination from air lines by positive, centrifugal force. Nothing to wear, clog, replace or adjust. They cut air tool maintenance costs to the bone. Easy to install. Sizes for every requirement.

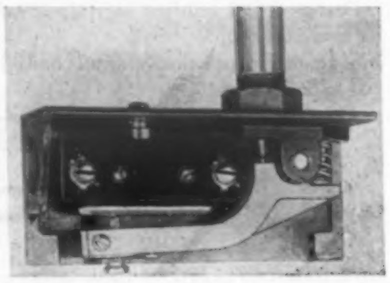
Send for Bulletin 543.

LOGAN ENGINEERING CO.
4904 Lawrence Ave., Chicago (30), Ill.
Makers of the Logan Lathe

The ARIDIFIER
Dries and Cleans Compressed Air

▲ Mention Item NED-1589 when writing ▲

TEMPERATURE LIMIT SWITCH



Adaptable for temperature control applications, Model H temperature limit switch is available with normally closed contacts for cutting off heat, stopping fan, closing valve or similar functions, or with normally open contacts for lighting lamp or ringing bell. With single-pole double-throw contacts, it may be used for breaking heating circuit while operating alarm circuit. Foolproof reset button operates from outside of case.

Tube is corrosion and heat resistant. Dial pointer provides for easy setting throughout adjustable range of 200 to 300 degrees Fahr. Snap-acting Micro-Switch is durable and operates without contact troubles. Operating range may be from 0 to 1400 degrees Fahr. Made by **Burling Instrument Co.,** 253 Springfield Ave., Newark, N. J.

▲ Mention Item NED-1592 when writing ▲

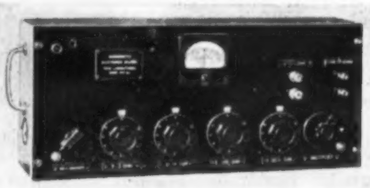
ZINC PLATING SOLUTION

S-B addition agent with special alkaline zinc plating solutions will produce satin-bright to bright deposits, degree of luster depending upon choice of operating conditions. In unagitated solutions, cathode current density range is from 10 to 45 amperes per square foot. Maximum brightness is obtained with solution temperature maintained at 70-75 degrees Fahr. Deposits are somewhat lustrous when taken from plating bath. Satin-bright to full-bright finish is produced by dipping work momentarily into ½ per cent solution of nitric acid.

Addition agent is claimed to have long life, lasting from 1 to 3 months. Zinc-aluminum anodes are recommended for use in solution. Deposits can be heat relieved, blackened, given phosphate coatings or any chromate film treatment. Deposits can be soldered without difficulty. They are of unalloyed zinc and afford excellent protective value, according to claims. Coating can be subjected to forming, bending or drawing operations without rupturing or lifting. Developed by **Hanson-Van Winkle-Munning Co.,** W. Church St., Matawan, N. J.

▲ Mention Item NED-1593 when writing ▲

RESISTANCE TESTER



Capable of measuring from 0.0001 ohm to 1 megohm, type G-710 Microhmmeter is basically an alternating current bridge. It requires only few tenths of milliwatt through resistance being measured to function accurately. Measuring voltage is at 60 cycles alternating current. Pure resistances may be read directly as ohms.

Low current at terminals makes it possible to measure contact resistance in relays, switches, joints and bondings without changing actual conditions of contact by heat or welding effect. High current effect may be studied by applying up to 5 amperes in series with resistance under test. Conductivity of solution is measured to 2 per cent accuracy. Made by **Tech Laboratories,** 7 Lincoln St., Jersey City 7, N. J.

▲ Mention Item NED-1594 when writing ▲

Important Addition
TO SQUARE D AIRCRAFT CIRCUIT BREAKER LINE

CLASS 9310
PUSH BREAKER

RATED 5•10•15•20
25•35•50 AMPERES

● This new manual reset circuit breaker is designed to provide protection of low voltage direct current circuits (up to 30 volts D.C.) not requiring switching. Designed primarily for aircraft applications, it is suitable for boats, tanks, turrets and other mobile units.

The bi-metallic trip element affords time limit protection against small, momentary overloads or instantaneous protection on heavy overloads or direct short circuits.

INSTANT VISIBILITY DAY AND NIGHT
The manual reset button, black on top, has a red band to indicate trip in daylight and a luminescent band to show trip in darkness. Neither band is visible when the button is in normal closed position.

WRITE FOR THE *"Airline"*

REGULATOR DIVISION
SQUARE D COMPANY
DETROIT • MICHIGAN

▲ Mention Item NED-1596 when writing ▲

Why Drive ...... with your
(It's Out of Date-Slow-Expensive)
... with a

Let the
HANSEN *one-hand* TACKER
Do your Tacking and Fastening

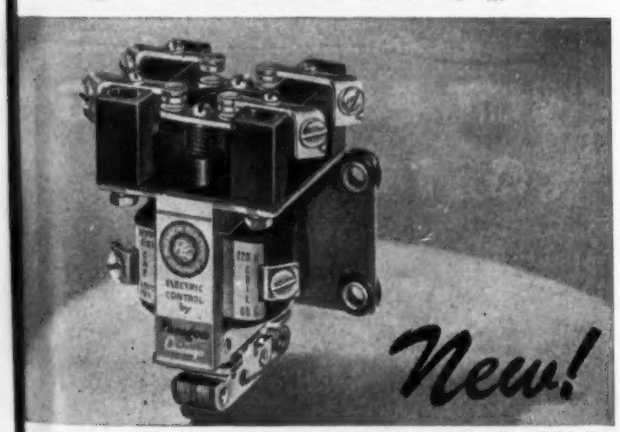
MODERN methods mean much—in saving time and producing more! The HANSEN one-hand TACKER saves time by doing tacking, fastening and assembling—fast as the hand can grip.

Airplane and other essential industries have adopted the HANSEN TACKER and find that it increases production speed. It drives into hard wood, thru thin metal or tin. Drives two-pointed Tackpoints or T-head Tacks up to ½" length.

Write for details! SEND FOR FOLDER

TACKERS HANSEN STAPLES
A.L. HANSEN MFG. CO.
5164 RAVENSWOOD AVE., CHICAGO, ILL.

▲ Mention Item NED-1590 when writing ▲



IMPROVED
SOLENOID TYPE RELAYS ...
by Paragon ..... available for early delivery

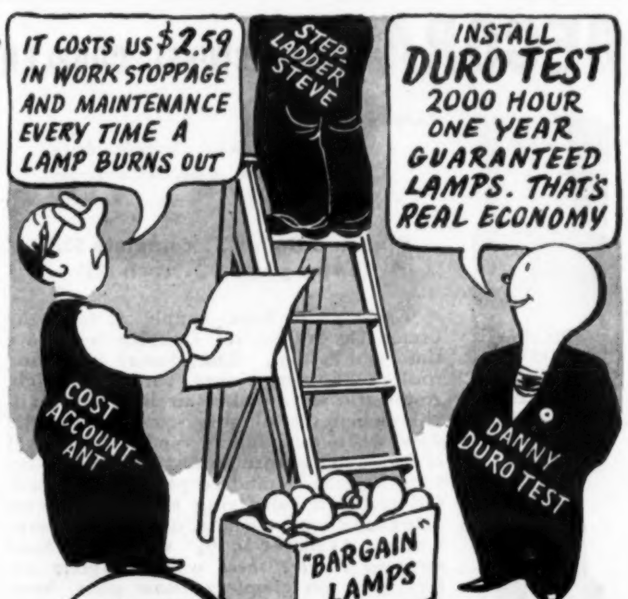
These relays are built to the most rigid specifications and pass the most critical inspection. Some of the striking improvements are: ease of mounting, silent in operation, readily accessible, quick acting, fine silver contacts, all metal parts proofed against corrosion . . . Conservatively rated at 15 amps., 110 volts A.C. non-inductive load. Write for a technical bulletin.

PARAGON ELECTRIC CO.
413 So. Dearborn St., Chicago 5, Ill.

FIRST OF A SERIES OF NEW PRODUCTS; OTHERS TO BE ANNOUNCED SOON

Paragon *Chicago*
BUILDERS OF ELECTRICAL EQUIPMENT .... SINCE 1905

▲ Mention Item NED-1591 when writing ▲

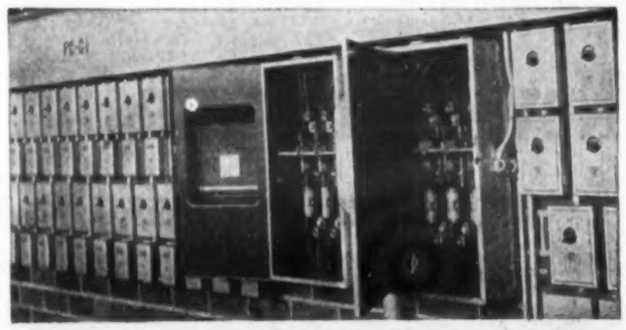


Copyright 1944 by Duro-Test Corporation

DURO TEST LAMPS ARE FULLY BACKED BY OUR 2000 HOUR ONE YEAR FREE REPLACEMENT GUARANTEE

WRITE TO
DURO TEST
CORPORATION
NORTH BERGEN • NEW JERSEY
For Complete Catalog #43 D
INCANDESCENT • FLUORESCENT
ELECTRONIC

▲ Mention Item NED-1595 when writing ▲



BUSS Super-Lag fuses are used in feeder and branch circuit switches.

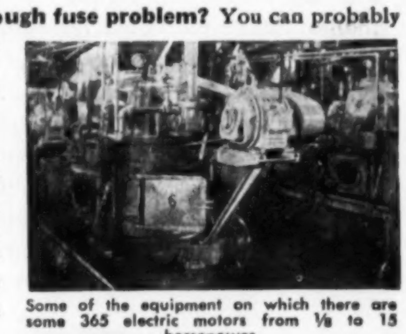
"Needless Motor Shutdowns Decreased Where We Installed BUSS Super-Lag Renewable Fuses"

Says Mr. Frank M. Herrick, Chief Engineer, Minnesota Valley Canning Company, Le Sueur, Minnesota.

"Our canning operations are tough on fuses," continues Mr. Herrick, "because our operating season is so limited we operate 22 hours a day—and use the other two hours to clean up the machines. The plants are thoroughly washed, consequently, the steam and moisture tightens motor belt drives. Condensation and moisture in the motors, plus tightened belts, make motor starting conditions a heavy burden on fuses. BUSS Super-Lag Fuses have definitely minimized this problem because of the long time-lag and positive contacts of the fuses.

"Where we have installed BUSS Super-Lag Fuses we have noticed an appreciable decrease in needless shutdowns, which we credit to the time-lag of BUSS Fuses as well as to their simple design."

Do you have a tough fuse problem? You can probably solve it as easily as Mr. Herrick did—by using all BUSS Super-Lag Fuses.



Some of the equipment on which there are some 365 electric motors from ⅛ to 15 horsepower.

Buss Fuses require no maintenance or periodic inspection. They don't open needlessly. If one opens, you can be sure some condition needs correction.

Here is why BUSS fuses greatly reduce or entirely prevent needless blows

The fuse case is designed to insure good contact on the link—vibration or heavy overloads or the constant heating and cooling of the fuse will not permit poor contact to develop.

The fuse link is the famous "BUSS Super-Lag," "Lag-plates" attached to it give it a long time-lag.

How to solve the "shutdown problem"

Pass the word along that all purchase records dealing with circuit protective devices should be immediately changed to call for BUSS Super-Lag Renewable Fuses. Then, as fuses are replaced or new installations made, your plant will automatically get the benefit of the carefree, trouble-proof protection that BUSS Super-Lag Fuses afford.

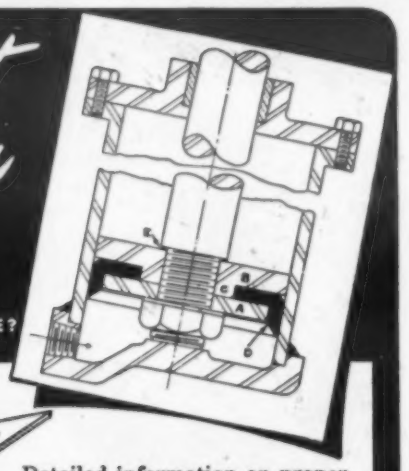
BUSSMANN MFG. CO., University at Jefferson St., St. Louis 7, Mo.
Division McGraw Electric Company

BUSS Super-Lag FUSES
Sold Through Wholesalers

▲ Mention Item NED-1597 when writing ▲

What Design

FOR CUP, BACKING PLATE, FOLLOWER PLATE?



Detailed information on proper design and application of various packings types . . . is given in a series of Packings Pointers published by Graton & Knight engineers. Free folders on cups, U's, Vees and flanges are now ready. Write Dept. G.

And for the industry's top-quality leather packings, specify SPARTAN — highest resistance to heat and chemicals; mellow and flexible, yet firm; unaffected by wetting and drying. SPARTAN is Graton & Knight's exclusive, special tannage for long-life, trouble-free packings.

GRATON & KNIGHT COMPANY

WORCESTER 4 GRATON AND KNIGHT MASSACHUSETTS

▲ Mention Item NED-1598 when writing ▲

★

New Parts from Old

with Metco Metallizing

YOU CAN SALVAGE worn machine elements as large as this 1500-ton press ram, or as small as the smallest lathe spindle, *in a fraction of the time and cost of new replacements*—with a Type 2E or Type E METCO Metallizing Gun. And the results are even better than new! *Any* metal can be sprayed on *any* base! No heat distortion! No need for highly skilled labor! The complete story on this ram and other salvage and production jobs are contained in the December METCO NEWS. Copies are limited, so return coupon for yours NOW!

METCO REG. U. S. PAT. OFF.

MAIL FOR FREE SALVAGE DATA

METALLIZING ENGINEERING CO., INC.
38-24 30TH STREET, LONG ISLAND CITY 1, N.Y.
Send December Metco News, also literature, prices, and priority data on equipment.

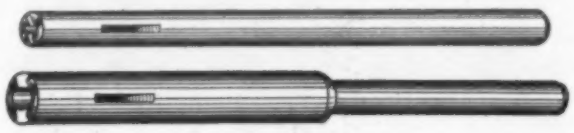
Name_____
Title_____
Company_____
Address_____ NED 3/44

WORLD'S FINEST METALLIZING EQUIPMENT

▲ Mention Item NED-1599 when writing ▲

BROKEN DRILL ADAPTER

Designed not only to permit use of broken drills, but also for use as extension drill, this Topflight broken drill adapter is available in practically any required length. Standard sizes



are 4 inches in length for drills ranging from No. 50 to No. 20. No soldering or swedging is required to hold broken piece of drill securely in place and perfectly aligned.

Broken drill is inserted in adapter and self-locking device instantly centers and grips it. Vibration is claimed to increase holding power, yet broken drill can be ejected easily when desired. Made by **Topflight Tool Co.**, P. O. Box 6728, Towson 4, Md.

▲ Mention Item NED-1600 when writing ▲

COMPOSITION STAIR TREADS

Suitable for replacing treads of rubber, Dura-Val and Dura-Val De Luxe stair treads are made of asphalt and felt composition. They look, feel and wear like rubber. Treads are waterproof, washable and long wearing and are designed with corrugated, non-skid surface. They can be cemented quickly and permanently to wood, metal, concrete and other materials with So-Lo stair tread cement.

These treads are available in both flat and nosing type, in black. Standard flat tread is 9 x 18 inches. Standard nosing tread is made in two sizes: 9 x 18 and 9 x 24 inches. Extra size treads can be furnished on special order. Made by **So-Lo Works, Inc.**, Loveland, O.

▲ Mention Item NED-1601 when writing ▲

METAL CUTTING POWER SAW

Of improved design, this line of metal cutting power saws includes hydraulic unit. Hydraulic micro-set length gage is mounted on conveyor to gage length of cut accurately. Feed pressure is adjusted by vernier finger-tip control which permits settings to ounces. All parts are readily accessible for cleaning and adjustment. The 7 and 11-inch automatic models can be converted easily for cutting single bar or nest of bars or tubes.

Four-sided saw frame completely surrounds blade and work. Backing plate blade support permits application of maximum feed pressure with minimum of strain on blade. Eight bearings on which saw frame and guide travel have been enlarged. Bearings have ground and renewable inserts. Saw frame is balanced in its reciprocating travel by dual hydraulic cylinders. Driving force is centrally applied. Chip capacity has been increased 60 per cent over former models, reducing number of clean-up periods required. Made by **Peerless Machine Co.**, Dept. N, 1600 Junction Ave., Racine, Wis.

▲ Mention Item NED-1602 when writing ▲

DECORA JIFFY SWIVEL COUPLER

(Shown at left:)
Female plug and female body. Available also in male. In ordering designate which you require.

Plug and Body . . . complete $1.00
(Extra plugs . . . each .25)

Wherever air hoses supply air tools the useful Decora Swivel Coupler will save time and bother. The change from one tool to another is easy, sure and quick. Automatic valve makes air instantly available when the plug is seated, stops the flow when the plug is removed. Swivel action avoids hose kinks and snarls on long lengths. Standard pipe thread used. Oil resistant valve ring replaceable with Schrader chuck washers, obtainable everywhere. Available in 1/4" size only. *Send for new catalog sheet* with complete information on couplers, blow guns, hose fittings and engine cleaners. Available from stock on AA priorities.

(Distributorships open in several areas)

See your DECORA Dealer or write

DECORA MANUFACTURING CO., INC.

Factory Office: 1819 FIFTH STREET, BERKELEY 2, CALIFORNIA

Chicago Distributor:
W. I. Martin & Co., 711 S. Dearborn St.

▲ Mention Item NED-1603 when writing ▲

HOLTZER-CABOT

SPECIAL MOTORS DESIGNED FOR *SPECIAL APPLICATIONS*

FRACTIONAL H.P.—A.C. OR D.C.

If operating conditions were always the same . . . if there were no differences in types and sizes of the product—there would be no need for special motors. But we know that variables do occur in motor operated equipment, which require specially designed motors to meet specific performance requirements of compactness, quietness, overload protection and long life. Holtzer-Cabot special motors are meeting the operating conditions in various types of equipment.

Holtzer-Cabot has concentrated its energies in the specialized business of designing and building special fractional HP motors for every purpose. Our engineers, backed by 68 years of motor design, can help you with your motor problems.

THE HOLTZER-CABOT ELECTRIC CO.
129 AMORY ST., BOSTON, MASS.

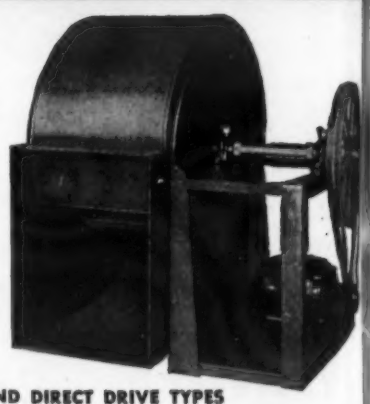
Chicago, Ill., New York, N. Y., Philadelphia, Pa.

▲ Mention Item NED-1604 when writing ▲

AIR, TOO, MUST WORK FOR VICTORY
KEEP IT MOVING WITH
Peerless VENTILATING SETS

★ Mess halls, army barracks, war service buildings and industrial plants require the movement of air for ventilating, cooling, heating or complete air conditioning.

These situations demand ventilating fans that not only measure up to capacities rated on the test floor, but which will also deliver the rated air volumes under practical operating conditions. Peerless Utility Ventilating sets are just such units.



BELT AND DIRECT DRIVE TYPES

Peerless Ventilating Sets are supplied in 26 belt-driven sizes and 12 direct-connected sizes. Belt-driven units are powered with from ½ to 7½ horsepower motors. Direct-driven units have ½ to 2 horsepower motors. Belt drive units are also furnished with variable pitch motor sheaves for speed adjustment.

All units can be supplied with or without weatherproof hood covers for drive mechanism.

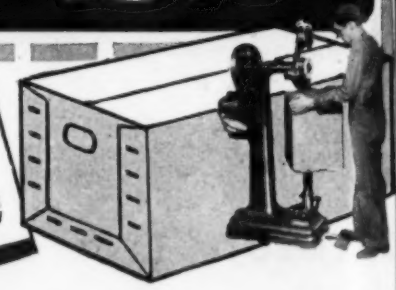
Write for Bulletin SDA-91, which gives complete dimensions and ratings of Peerless Utility Blowers.

THE PEERLESS ELECTRIC CO.
WARREN, OHIO
FIFTIETH ANNIVERSARY
FROM Pearl Harbor TO VICTORY

▲ Mention Item NED-1605 when writing ▲

CUT PACKAGING COSTS 15%

"Since we discontinued our old method of packing, your Acme Silverstitcher has cut our packaging cost 15%."
. . . Die Casting Company



Silverstitcher IS THE ANSWER!

Free! BOOKLET

Learn how one manufacturer saved the labor of two people, another producer "increased shipping output 50% . . . There are facts you can easily prove by using an Acme Silverstitcher.

Many Models to meet your stapling problems—also special machines . . . all sold under guarantee. Write for information. See how you can save. Sturdily built, new features mean long life, quiet, safe, speedy operation.

ACME STEEL COMPANY
2822 ARCHER AVE., CHICAGO, ILLINOIS
Branches and Sales Offices in Principal Cities

▲ Mention Item NED-1606 when writing ▲

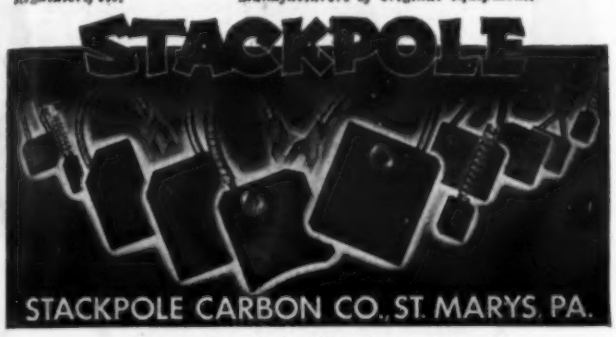
BRUSH PROBLEMS *Answered*

Brushes - Anodes Bearings Brazing Blocks Brake Lining Electrodes Welding Rods Packing, Piston, and Seal Rings Pipe - Powder Metallurgy Carbon Discs for Regulators, etc.

One after another, over a period of years, Stackpole brush developments have paced the trend toward higher speed operation of electrical rotating equipment, better commutation, higher capacity, and dependable performance at high altitudes.

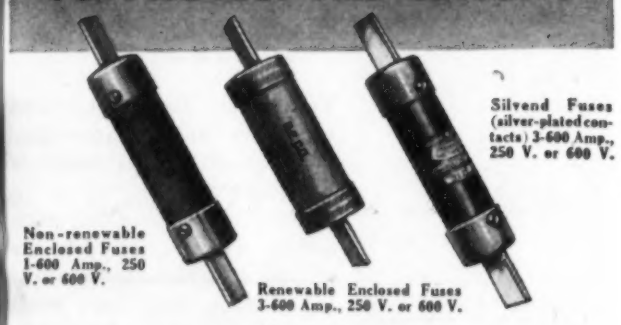
That's why, whatever your brush requirements, it pays to check them at frequent intervals against the latest Stackpole engineering developments.

Stackpole Brushes are sold only to manufacturers of original equipment.



▲ Mention Item NED-1607 when writing ▲

USE G-E FUSES TO PROTECT ALL CIRCUITS



These Are the Fuses General Electric Uses To Protect Its Own Equipment

G-E fuses provide reliable overload and short-circuit protection for all electrical circuits. They are thoroughly tested and accurately rated. G-E Silvend fuses have silver-plated contacts . . . are designed for use with apparatus having silver-plated fuse contacts. Heating due to oxidation does not occur with this combination.

For further information see the nearest G-E Merchandise Distributor or write to Section D342-48, Appliance and Merchandise Department, General Electric Co., Bridgeport, Conn.

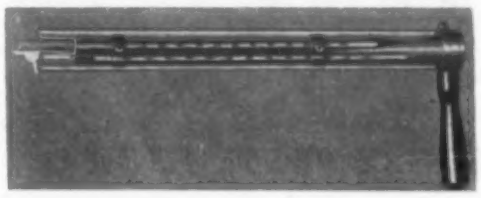
GENERAL ELECTRIC

▲ Mention Item NED-1608 when writing ▲

▲ Mention Item NED-1609 when writing ▲

SLING PSYCHROMETER

Danger of breaking thermometers is overcome through design in this sling psychrometer. Two thermometers are securely mounted within transparent plastic tube. When unit

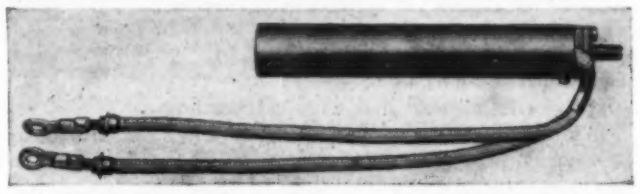


is whirled to obtain wet and dry bulb readings for relative humidity determinations, blast of air through tube from center of rotation is created. This air blast is caused by both centrifugal force and Bernoulli effect. Wet bulb thermometer cools rapidly and fully. Instrument is particularly useful in field and plants where rough handling is encountered. Made by **Laboratory Specialties, Inc.**, 144 S. Wabash St., Wabash, Ind.

▲ Mention Item NED-1610 when writing ▲

TUBULAR THERMOSTAT

Applicable for all types of equipment where very close regulation of temperature is required and where light weight, small size and compact design are of importance, this tub-



ular thermostat is ⅝-inch in diameter by 3-11/16 inches long. It consists of high-expanding nickel steel tube enclosing contact mechanism. Ratio of contact motion to tube expansion is very high so that extremely close temperature control is secured. Because all parts are held in tension, unit is unaffected by vibration. Contact mechanism is of slow make and break type with large silver contacts.

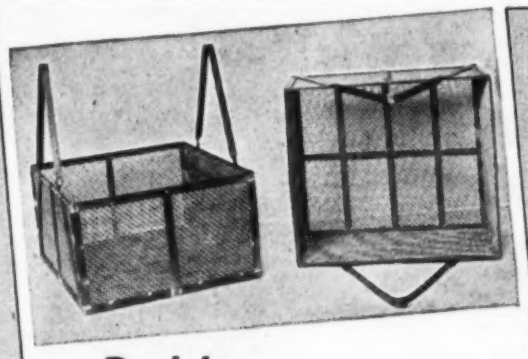
Nickel steel tube is only part affected by temperature changes. As this is directly exposed to temperature variations, there is no inherent lag in operation. Contacts will make and break with change of less than 1 degree Fahr. Adjustment is claimed to be maintained indefinitely and there is no tendency to creep. Unit may be furnished with normally open or normally closed contacts. Temperature range may be up to 600 degrees Fahr. Current rating of contacts is 10 amperes at 30 volts direct current or 10 amperes at 110 volts alternating current. Leads may be supplied to user's specifications. Temperature is set and locked to customer's specification. Made by **The Wilcolator Co.**, 1001 Newark Ave., Elizabeth, N. J.

▲ Mention Item NED-1611 when writing ▲

DO YOU KNOW?

Gases and vapors which are invisible to human eye are detected readily with new electric eye which has been developed to warn of dangerous concentrations of compounds in atmosphere of industrial or processing plants. Known as ultraviolet photometer, device operates almost instantaneously. It can be used to take quick "grab" samples or to run continuously. Developed by E. I. du Pont de Nemours & Co., Wilmington 98, Del.

▲ Mention Item NED-1612 when writing ▲



Pickling
BASKETS

BUCKETS, VATS and CRATES

Made of Monel, Inconel, Copper, Steel and other metals, to suit your individual needs.

Send us details of your requirements. Our engineers will suggest the metal most suitable and design equipment that will help increase operating efficiency.

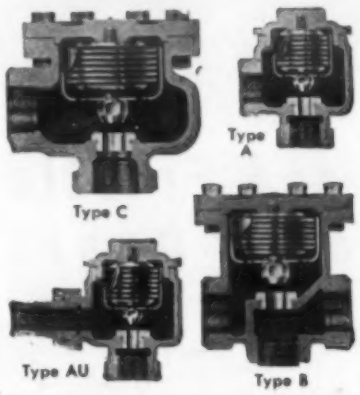
The KIRK & BLUM MFG. CO.
2813 SPRING GROVE AVE. CINCINNATI, OHIO

KIRK AND BLUM

▲ Mention Item NED-1613 when writing ▲

NICHOLSON
Industrial Thermostatic
TRAPS

ENORMOUS WATER AND AIR DISCHARGING CAPACITY
▼
POSITIVE INTERMITTENT VALVE ACTION



Plus

★ No Air Binding
★ No Freeze-ups
★ No Adjustment
★ No Dribbling
★ No Water-logged Units

Two to six times greater valve area and capacity than average traps. Five types, sizes ¼" to 2", for pressures up to 225 lbs.

★

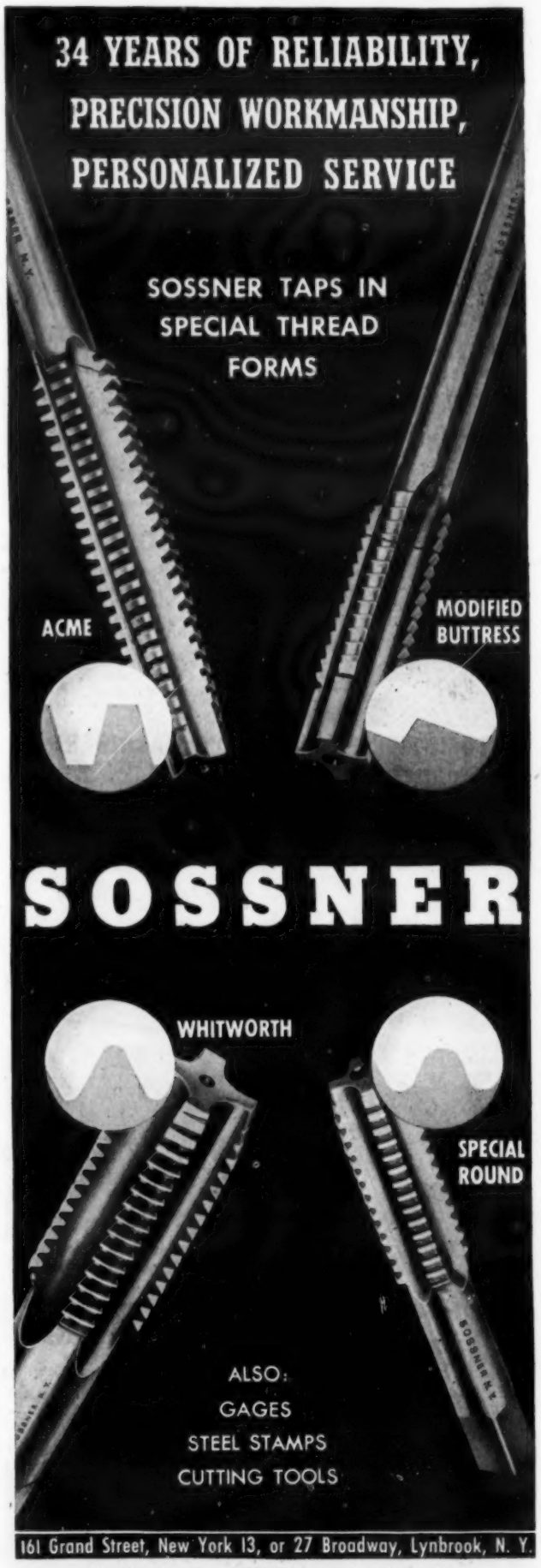
WRITE FOR TRAP BULLETIN No. 843
Also see our catalog in Sweet's

W. H. NICHOLSON & CO.
162 OREGON ST., WILKES-BARRE, PA.
Valves ★ Traps ★ Steam Specialties

▲ Mention Item NED-1614 when writing ▲

34 YEARS OF RELIABILITY, PRECISION WORKMANSHIP, PERSONALIZED SERVICE

SOSSNER TAPS IN SPECIAL THREAD FORMS



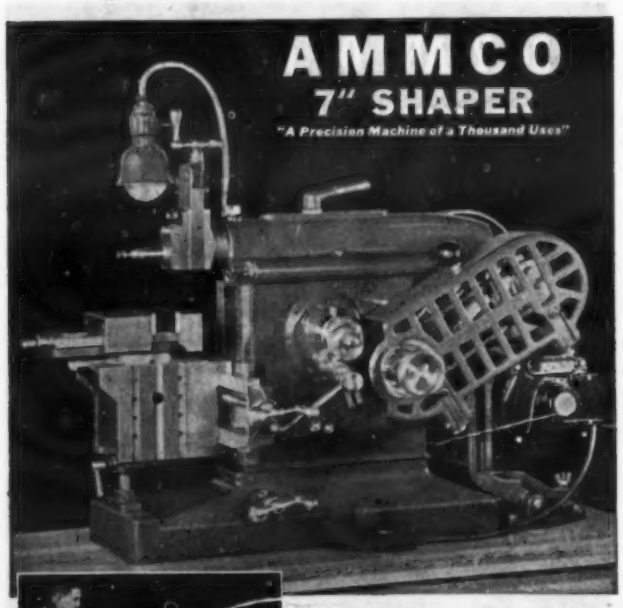
161 Grand Street, New York 13, or 27 Broadway, Lynbrook, N. Y.

▲ Mention Item NED-1615 when writing ▲

Matting and Frosting on Vibrator Quartz
with
LEIMAN BROS.
Sand Blast

produces that silken finish so valuable in this work—
SIMPLE SELF-FEEDING SAND
LEIMAN BROS.
167 CHRISTIE ST. • NEWARK, N. J.

▲ Mention Item NED-1618 when writing ▲



IT'S PORTABLE
--Saves Steps and Time--
Don't tie up a big shaper when so many jobs can be done just as accurately and much quicker and more economically on the AMMCO 7" PRECISION SHAPER.
Available for stationary installation or mounted on portable cabinet easily rolled to the mechanic's workbench ... Write today for specifications and prices.

AUTOMOTIVE MAINTENANCE MACHINERY CO.
2150 Commonwealth Avenue North Chicago, Ill.

▲ Mention Item NED-1619 when writing ▲

MAKE YOUR OWN PRINTS and PHOTO COPIES -and save 80%!

VICTORAY makes blueprints, black-and-white prints, photo copies—and is a photo print dryer besides. No other unit does so much, yet costs so little to own and operate!
$127.50 net price inc. lamps, F.O.B. Chi.

Speed up Production

Make photo copies with only 1 second printing time, up to 24"x34". Blueprints or black-and-white prints in 3 minutes—at about 1c a sq. ft. No darkroom. Can be operated by any inexperienced person. Uses only 8 ordinary light bulbs. WRITE FOR CIRCULAR.

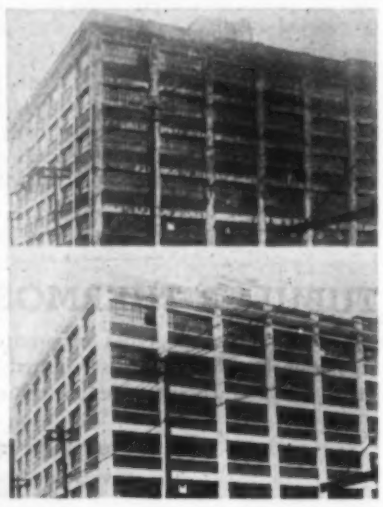
TRADE MARK REG. PATENTS PENDING
VICTORAY
VICTORAY PRODUCTS CO., 123 N. WACKER DR., CHICAGO

- PERFECT BLUEPRINTS
- AUTHENTIC PHOTO COPIES
- BLACK-AND-WHITE PRINTS
- PHOTO PRINT DRYER

▲ Mention Item NED-1620 when writing ▲

NEW Processes AND Materials

MASONRY PROTECTION



After four years of laboratory research and six years of field application under control and observation, Waterfoil which restores masonry surfaces and improves appearance is now available for industrial use. Made of irreversible inorganic gels which react chemically with lime hydrate of masonry, material may be applied to concrete, brick or stucco surfaces. It forms hard, heavy coating which adheres strongly with physical and chemical bond.

Resulting coating has microscopically fine spongelike character which permits masonry to breathe. Water in vapor form can escape, but absorption of water in liquid form is impeded. Rusting of steel reinforcement bars and spalling is inhibited.

Material is applied by stiff brush and is claimed to lengthen life expectancy of any structure. It is made of non-critical materials. Made by A. C. Horn Co., 43-36 Tenth St., Long Island City 1, N. Y.

▲ Mention Item NED-1621 when writing ▲

POLYVINYL RESINS

Now available to industrial users, GEON group of polyvinyl resins is derived from basic raw materials which have mineral origin. Two of these resins, GEON 202 and GEON 203, are entirely new vinyl chloride: vinylidene chloride copolymers and are different from any others previously developed in this group.

Materials can be processed easily on existing equipment and will expand the field served by this class of plastic materials. Coating of fabric, paper, foil and other materials, manufacture of film for packaging and manufacture of extruded and molded materials are among principle fields for these resins. Purchases of this material are subject to allocation under General Preference Order M-10, although reasonable quantities are available for experimental purposes.

Resins are claimed to offer combination of rubber-like properties with nonflammability and resistance to oxidation. In addition to resins in powder form for compounding by purchaser, they may be obtained in ready-to-use form, either as granules or sheet. Tailor-made formulations can be supplied for special purposes. Made by The B. F. Goodrich Co., Chemical Div., Dept. E., 500 S. Main St., Akron, O.

▲ Mention Item NED-1622 when writing ▲

Peelable PRODUCTION STICKERS

APPLIED WITHOUT MOISTENING
ADHERE TO ANY SMOOTH SURFACE
EASILY PEELED OFF

Here's an entirely new type sticker that makes obsolete past methods of marking parts in production—takes the place of string tags, chalk marks, water-gum stickers.

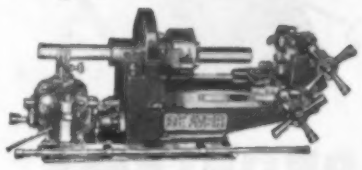
These new Kum-Kleen stickers are far easier and faster to use—are applied without moistening, stick permanently with a finger-tip pressure to any smooth surface—metal, glass, plastic, wood, paper—won't fall off and can't get lost. When the job is done they peel off like magic—in one piece, never harm the surface. Available in various sizes, printed or plain.

Write for samples and booklet which explains hundreds of ways in which Kum-Kleen stickers have increased production and efficiency Dept. NED-3.

Kum-Kleen
AVERY ADHESIVES
451 E. Third St., Los Angeles 13, Calif.
IN CANADA - ENTERPRISE SALES AND DISTRIBUTORS TORONTO

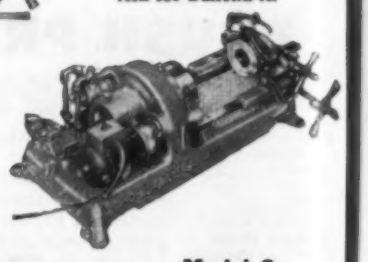
▲ Mention Item NED-1623 when writing ▲

The A-B-C of Pipe and Bolt Machines!



Model-A
A high-speed heavy-duty deluxe Pipe and Bolt Machine. Range ½ to 2-inch—up to 12-inch with geared tools and drive shafts. Bolts, ¾ to 2-inch. Wt. 415 lbs. Ask for Bulletin-A.

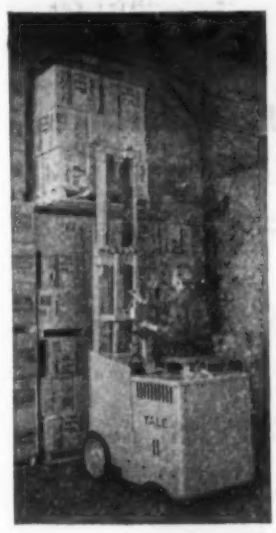
Model-B
A compact utility Pipe and Bolt Machine combining many features of Model-A with the easy portability of Model-C. Range ½ to 2-inch — up to 8-inch with drive shaft and geared tools. Bolts up to 1½-inch. Weight 280 lbs. Ask for Bulletin-B.



Model-C
A sturdy little Power Unit
Converts Hand Pipe Tools into Power Tools from ½ to 8 inches. Threads 8-inch in 6 minutes. Threads bolts up to 1½-inch. Equipped with automatic chuck wrench ejector—a safety feature. Two men can use it at the same time without interference. Easily portable—weighs about 150 lbs. Write for Bulletin-C.

BEAVER PIPE TOOLS
Highest Quality • WARREN, OHIO • For 40 Years
344 HENRY AVE. WARREN, OHIO

▲ Mention Item NED-1624 when writing ▲

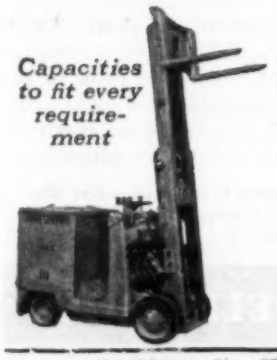


TIER, STACK, STORE AND MOVE MATERIALS FASTER —BETTER!

Yale Electric Industrial Trucks represent the latest developments in self loading materials handling equipment.

These modern tools tier, stack and store loads right up to the ceiling, no overhead space is lost. In addition, they have small over-all dimensions for operation in narrow aisles, around sharp corners—even carrying full capacity loads.

Whatever the need . . . whatever the load . . . there's a Yale Electric Industrial Truck ready to do the job with greater efficiency and time saving economy.



Capacities to fit every requirement

-YALE-
THE YALE & TOWNE MANUFACTURING CO.
Philadelphia Division
Philadelphia, Pa., U. S. A.

▲ Mention Item NED-1625 when writing ▲

How good?...How many?...How soon?
UNITED STATES ELECTRICAL TOOLS
Answer these "$64 Questions"
SWING FRAME GRINDER
Perfect visibility; perfect balance laterally and rotatively; angular adjustment 45° to right and 80° to left; easy wheel change; ball-bearing. Chips and dirt removed in grinding slide off. Reasonably prompt deliveries. Write for details.

The UNITED STATES ELECTRICAL TOOL Co.
CINCINNATI, OHIO

▲ Mention Item NED-1626 when writing ▲

AIR-SAVER Leak Proof AIR VALVE

- Use wherever a controlled blast of air is needed for cleaning, drying, cooling or ejecting. Easy to install. Mount in any position. Operates at any angle. Provides extra large air volume. Clean seal, a long wearing valve designed to stay leak proof. Manufactured and guaranteed by Briggs and Stratton Corp., and marketed nationally by

Valve, mounting rods and operating cam, complete as shown. $12.50 f. o. b. Detroit

Weight Four Pounds.

Palmer-Shile Co.
711A West Jefferson Ave., DETROIT 17, MICH.

▲ Mention Item NED-1627 when writing ▲

Holds Tight as a Weld!

WEDGE-LOCK, exclusive with ARMOR COLLET CHUCK, firmly grips hardest steel though several thousandths outsize

Contour wedges lock positively, open instantly. Effortless operation. Accurate stock length assured. Chuck turns with spindle; no internal ball-bearings or gears. Runs cool...no friction, no drag on motor, no lubrication. Full spindle capacity for lathes with 1½"-8 thread spindles. Larger sizes on special order. Delivery *now*. Address Dept. NED3.

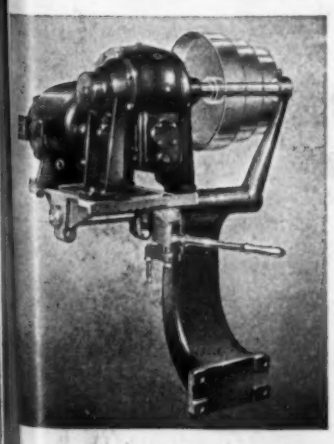
Collets changed in 2 minutes
All parts specially ground, hardened

AIRCRAFT MACHINERY CORP.
214 West Orange Grove • Burbank, California

▲ Mention Item NED-1628 when writing ▲

MASTERDRIVES
NOW AVAILABLE TO 750 SPECIFICATIONS

Engineered for practically any machine tool . . . and guaranteed as complete units.



INCREASE PRODUCTION . . . Masterdrive efficiency helps you produce more, *faster*.

ELIMINATE LINE-SHAFTING . . . Masterdrives free your tools of lineshaft hazards and limitations, yet retain flexibility of belted units.

REDUCE MAINTENANCE . . . Masterdrives are powered by famous Master gear head motors, proved dependable by the 3 million now in service. And each Masterdrive is complete . . . motor and drive in a single unit.

One responsibility — MASTER.

THE MASTER ELECTRIC COMPANY
INDUSTRIAL EQUIPMENT DIV. — DAYTON, O.

▲ Mention Item NED-1629 when writing ▲

New Processes & Materials

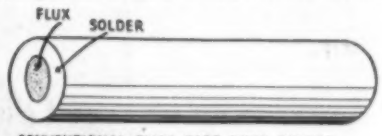
RUST PREVENTIVE

Developed for internal plant protection of steel parts between processing or machining operations, Cosmoline No. 805 is a combined rust preventive, cleaner and fingerprint neutralizer. It neutralizes such causes of corrosion as chemical atmosphere, fumes, high humidity and particularly, acid perspiration from workers handling parts. This rust preventive is fluid product which conforms to requirements of Ordnance Technical Manual TM 38-305. It will meet and exceed 24-hour salt spray and 100-hour humidity tests. Made by **E. F. Houghton & Co.**, 303 West Lehigh Ave., Philadelphia, Pa.

▲ Mention Item NED-1630 when writing ▲

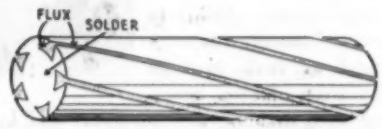
FLUXED WIRE SOLDER

Containing flux in longitudinal grooves on surface rather than in conventional core, Fluxrite fluxed wire solder is claimed to have advantage of applying flux to work before solder melts. Since flux is outside, it liquefies and flows onto work immediately when heat is applied. This is said to assure thorough fluxing and to result in strong soldered joints.



CONVENTIONAL FLUX-CORE WIRE SOLDER

Design also guarantees unbroken flow of flux, since there is more than one flux-filled groove. Since flux is on outside, its availability can always be checked by simple visual examination. This wire solder is available in standard diameters, and in two compositions designated as Red Stripe and Green Stripe. These designations refer to color of flux which has been dyed for identification purposes. Made by **National Lead Co.**, Room 1815, 111 Broadway, New York 6, N. Y.



NEW TYPE OF WIRE SOLDER WITH FLUX IN GROOVES

▲ Mention Item NED-1631 when writing ▲

LEAD PLATING SOLUTIONS

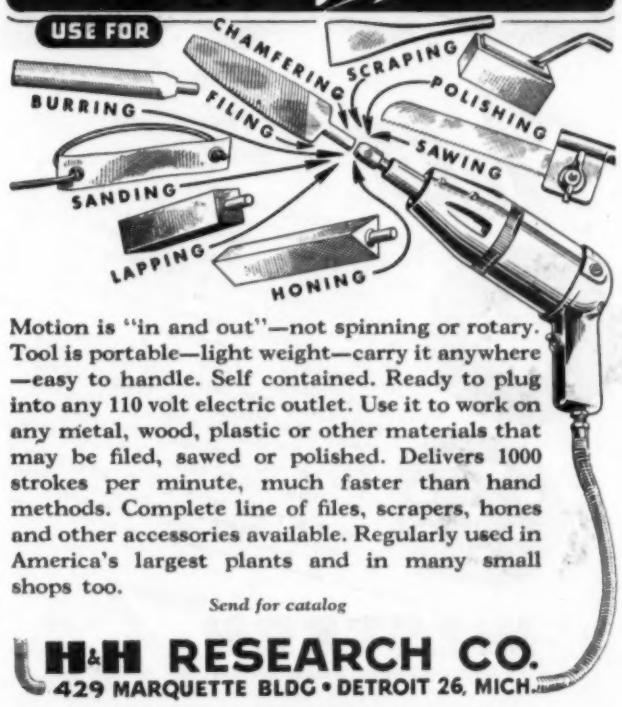
Affording corrosion resistant coating for protection of iron and steel, lead coatings formed through use of Concentrated Protecto lead plating solution may also be used to limited extent on nonferrous metals. Plating solutions are prepared by adding three parts of water to one part concentrate. Resulting solution is for general purpose plating at low to medium current densities. Plating range is from 5 to 15 amperes per square foot.

Super Protecto lead concentrate is diluted with equal parts of water to form electroplating bath for general purpose plating. Since metal concentration is four times that of first mentioned solution, current density range is extended to 30 amperes per square foot, or higher with suitable agitation. This solution is recommended for barrel plating.

B-H lead solution is used for plating as prepared. It is intended especially for lead plating bearing surfaces. Deposits with proper micro-structure for subsequent indium plating and heat treating are produced. Solutions developed by **Hanson-Van Winkle-Munning Co.**, West Church St., Matawan, N. J.

▲ Mention Item NED-1632 when writing ▲

H&H RECIPROCATING ACTION
PORTABLE Electric TOOL



Motion is "in and out"—not spinning or rotary. Tool is portable—light weight—carry it anywhere—easy to handle. Self contained. Ready to plug into any 110 volt electric outlet. Use it to work on any metal, wood, plastic or other materials that may be filed, sawed or polished. Delivers 1000 strokes per minute, much faster than hand methods. Complete line of files, scrapers, hones and other accessories available. Regularly used in America's largest plants and in many small shops too.

Send for catalog

H&H RESEARCH CO.
429 MARQUETTE BLDG • DETROIT 26, MICH.

▲ Mention Item NED-1633 when writing ▲

SEE YOUR DEALER OR WRITE DIRECT

V & E MANUFACTURING CO.
PASADENA • CALIFORNIA

▲ Mention Item NED-1634 when writing ▲

THE FIRST WORD IN CONSTRUCTION
THE LAST WORD IN WEAR!

"Big Fist" Shovels, made only by WOOD, are the *hard-wear* champions of the shovel field. They deliver more and better work, at less cost, with less effort...and they *last longer*. For real economy and super-service, specify "Big Fist" Shovels on your next shovel order.

THE WOOD SHOVEL AND TOOL COMPANY
PIQUA, OHIO

A NATIONAL ORGANIZATION SPECIALIZING EXCLUSIVELY IN SHOVELS, SPADES AND SCOOPS

▲ Mention Item NED-1635 when writing ▲

AUTOMATIC Cramer TIMING DEVICES

The R.W. CRAMER COMPANY Inc
CENTERBROOK CONNECTICUT

▲ Mention Item NED-1636 when writing ▲

▲ Mention Item NED-1637 when writing ▲

▲ Mention Item NED-1638 when writing ▲

A new 36 page Installation and Inspection Manual B-44 for Cherry Blind Rivets is now ready for distribution. The book contains many diagrams and charts giving complete instructions on installation, use of tools and inspection of Cherry Rivets. Request your copy from Department A-113, Cherry Rivet Company, 231 Winston Street, Los Angeles 13, California.

CHERRY RIVETS, THEIR MANUFACTURE AND APPLICATION ARE COVERED BY U.S. PATENTS ISSUED AND PENDING

Cherry Rivet Company
LOS ANGELES, CALIFORNIA
▲ Mention Item NED-1639 when writing ▲

New Processes & Materials

PROTECTIVE PLASTIC COATING

Used to guard plastic surfaces in aircraft during fabrication, Protecto-Kote No. M-13780 is liquid coating and is claimed to have been approved for use by Army Air Forces. It dries rapidly, forming protective coating against scratching and abrasion. It is impervious to grease, paints and paint solvents. It may be used on such surfaces as window lights, instrument panel plastic installations and enclosures.

Entire piece of plastic can be dipped into material, drained and allowed to dry. Finish may be sprayed, also, and coverage is about 200 square feet per gallon. Being water soluble, coating is removed easily and no supplementary cleaning or polishing is required. Made by **Reserve Research Co.**, 1637 Superior Ave., Cleveland 14, O.

▲ Mention Item NED-1640 when writing ▲

CONCRETE TANK LINING

Concrete gasoline barges and underground storage tanks are being lined with synthetic rubber "latex" or water dispersion particles of synthetic rubber and are resistant to high octane fuels now in use. Concrete was formerly impractical as tank material because alkalies reacted with gasoline to form gums and lower octane rating. New process was developed by Stoner-Mudge Inc. of Pittsburgh.

Fabric of type used for camouflage cloth is cemented to concrete with Thiokol "latex" and then coated with same material. Result is gasoline-resistant container which protects contents from alkalinity of concrete and which will bridge over normal cracks in concrete caused by shrinkage, settling and unusual stresses. "Latex" made by **Thiokol Corp.**, Dept. SM, Trenton, N. J.

▲ Mention Item NED-1641 when writing ▲

DEGREASING COMPOUND

Containing no critical materials such as carbon tetrachloride or trichlorethylene, Penetone degreasing and cleaning medium is claimed to function better than compounds containing these materials. It is said to be completely free from fire hazards. It does not give off noxious or toxic fumes and operators do not have to wear rubber gloves or aprons for protection.

Material is available in standard form which is suitable for use in 80 per cent of all applications, including degreasing jobs where lighter types of greases and oils are used. Penetone Senior is stronger concentrate and is recommended for use on heavy oils and caked-on greases. It exerts mild inhibiting action on metal surfaces which retards corrosive action.

Major Penetone is recommended for heavy duty degreasing requiring extremely potent preparation. The above cleaners also may be used for such maintenance operations as cleaning floors under machinery, as well as on garage and grease rack floors. Made by **The Penetone Co.**, Tenafly, N. J.

▲ Mention Item NED-1642 when writing ▲

Felt
MEETING TODAY'S PRODUCT REQUIREMENTS

• The amazing versatility of felt is being demonstrated by its numerous uses in products of war and peace. Processed by Western in grades from wool softness to rock hardness and in hundreds of shapes and sizes, felt is recommended wherever the job demands resiliency, flexibility, compressibility, sound deadening, resistance to age, heat and water, and many other properties. Western's engineering staff is prepared to assist you on any problem involving the possible use of felt. Write us today.

WESTERN FELT WORKS
4035-4117 Ogden Ave., Chicago 23, Illinois
Branch Offices in All Principal Cities

WESTERN Felt
Largest Independent Manufacturers and Cutters of Wool, Hair or Jute Felts
▲ Mention Item NED-1643 when writing ▲

Talk About PRODUCTION Without DIES!

4,000 Parts Per Day with DI-ACRO Bender

"Enclosed are pictures taken in our plant which prove the DI-ACRO Bender will do a real production job. We are making 4,000 completed parts per day which is competitive to most Power Presses." (Name on request.)

Here is an example of "DIE-LESS DUPLICATING" typical of a great variety of formed parts readily made with DI-ACRO Precision Machines,—Benders, Brakes, Shears. Picture below shows an acute right angle bend and photograph above shows the finished part formed to die precision. Women operating DI-ACRO UNITS maintain a high out-put on production work.

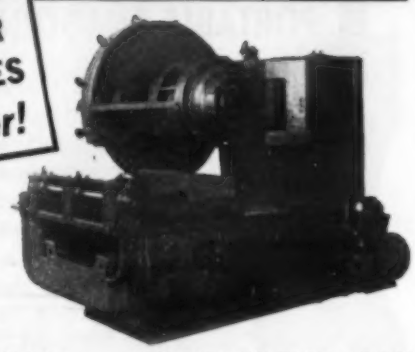
Send for Catalog •

O'NEIL-IRWIN MFG. CO.
354 EIGHTH AVENUE SOUTH • MINNEAPOLIS 15, MINNESOTA
▲ Mention Item NED-1644 when writing ▲

WRITE FOR CATALOG NED
▲ Mention Item NED-1645 when writing ▲

Amazing FRICTION SAW CUTS 131 LB. STEEL RAIL IN 10 SECONDS!

CUTS BAR AND SHAPES Like Butter!



Regardless of your cutting or trimming problems . . . submit them to KLING Engineers. . . . A friction saw may solve them.

Improved Design Friction Saw→

SPEEDS UP PRODUCTION . . . REDUCES CUTTING COSTS From Dollars To Pennies!

Now, with these new improved design Kling Friction Saws, steel can be cut almost as quickly and easily as butter. And, it makes no difference how tough or hard the steel is. A 131-pound steel rail in 10 seconds . . . an 8-inch, 25½-pound I-beam in 6 seconds. The fast cutting of rails, flues, pipe, bar or general structural shapes, saves time and money and greatly speeds up production. Kling Friction Saws will cut any kind of steel; high and low carbon steel or alloy—either hardened or annealed . . . varying sizes and shapes without any change of set-up. Correct design in blade mounting, blade drive, blade cooling and quality of blade, results in better cutting and longer life.

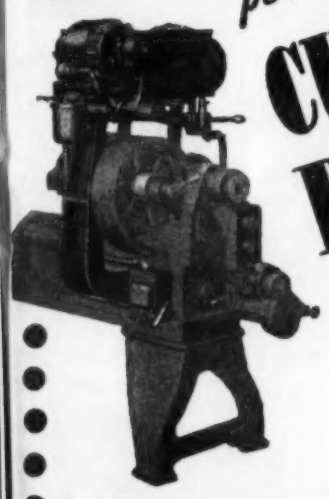
FREE! If you want to *slash* metal cutting costs and increase production, write for details. Complete information in our Bulletin No. 9200 sent FREE. No obligation.

KLING BROS. ENGINEERING WORKS
1306-G North Kostner Ave., Chicago 51, Illinois

KLING'S FRICTION SAWS

▲ Mention Item NED-1646 when writing ▲

LESS SPACE per machine with CULLMAN DRIVES



Cullman Direct Drive requires less space for machine and permits a more economical arrangement of shop equipment. At the same time it increases the efficiency of shop machines 25 per cent.

Cullman will motorize and modernize your shop. Let us quote on modernizing your machine shop with Cullman Drives.

CULLMAN WHEEL CO.
1357 ALTGELD ST.
CHICAGO, ILLINOIS

▲ Mention Item NED-1647 when writing ▲

LAMINATED GE TEXTOLITE

The Shock Resisting Plastics
with
Maximum Dimensional Stability
Minimum Product Weight
Improved Electrical Properties
for
Easily Balanced Rotating Parts, Cams, Gears, Bearings, Airplane Parts, Electronic and Chemical Apparatus
Sheets
Rods
Tubes
Moldings

For further information write
1 Plastics Avenue, Pittsfield, Mass.

GENERAL ELECTRIC
PD-238A

▲ Mention Item NED-1648 when writing ▲

New Processes & Materials

CUTTING GRADE CARBIDE

According to reports of tests by various manufacturers, No. 710 cutting grade carbide is claimed to be superior to any steel cutting grades now available for machining tough alloy steels. Prompt deliveries are insured for proper priorities. Made by Willey's Carbide Tool Co., 1340 W. Vernor Highway, Detroit 1, Mich.

▲ Mention Item NED-1649 when writing ▲

PRECISION FINISH

Employing abrasives with technique which eliminates scratches, Hyprez high precision finish is applicable to surfaces prepared by machining, grinding, honing or lapping.

Even under strong magnification, surface is claimed to present uniform appearance without pronounced scratch pattern. Finish is being applied to ball bearing races, instrument pivots, cartridge case dies, gears, hydraulic cylinders and other parts.

Process is particularly adaptable to straight and tapered holes, as well as to contours. Amount of stock which needs to be removed depends upon quality of surface before finishing, depth of deepest imperfection, hardness and quality of work piece. Developed and applied by Engis Equipment Co., 310 S. Michigan Ave., Chicago 4, Ill.

▲ Mention Item NED-1650 when writing ▲

FILTERING MATERIAL

Containing as many as 6400 perforations per square inch, multipore filter material is adaptable for use in chemical plants, food factories, pharmaceutical concerns, coal and iron mines, steel mills, liquor distilleries and many other types of industries. Typical uses include filtering fruit juices for shipment to combat areas, purification of insulin, production of magnesium and speeding production of four engine bombers.

By reversing procedure involved in eliminating microscopic holes found in application of natural rubber latex for waterproofing fabric, scientists attempted to see how many tiny holes they could create in square inch of latex. After extensive research, they succeeded in blowing as many as 6400 holes per square inch in sheets measuring 42 inches wide by 20 yards long.

Filter screens are made of either hard or soft rubber and may be compounded to resist abrasion, high temperature, alkaline or acid solutions, as well as certain oils and greases. Since material can only be made from natural rubber latex, filters may be applied only to most important products. Made by United States Rubber Co., 1207 Rockefeller Center, New York, N. Y.

▲ Mention Item NED-1651 when writing ▲

There are over SIXTY THOUSAND SPERRY EXACTOR REMOTE CONTROLS in use!

The Sperry EXACTOR Hydraulic Remote Control is a simple, unique, single-tube system designed to control mechanisms over distances up to 200 feet. The more than 60,000 EXACTORS in operation today, solving the remote control requirements of design engineers in many fields, are proof of the thorough engineering and trouble-free design incorporated in this system.

Positive control, through a single tube

It is accurate to a fraction of a degree and entirely self-contained, reproducing applied motion without the aid of an auxiliary source of power. It presents no installation problem, because both the Transmitter and Receiver are compact and light in weight, and the tube which connects them can be bent around obstacles easily. Vibration does not interfere with its positive, reliable action and means is provided for periodic temperature compensation.

If you have a remote control problem — in the railroad, marine, automotive, aviation, or any of the industrial fields — you will want our completely descriptive booklet. Send for it today.

The Sperry EXACTOR HYDRAULIC REMOTE CONTROL is rated at 400 inch-pounds in one direction, through 55° of motion, and 125 inch-pounds on the return.

FILL OUT AND MAIL COUPON BELOW. - NO OBLIGATION

N.E.D. EHD-344

SPERRY PRODUCTS, INC.
HOBOKEN • NEW JERSEY

Gentlemen: Please send me, at no cost, a copy of your Bulletin 79-D containing complete details on your EXACTOR HYDRAULIC REMOTE CONTROL.

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

SPERRY PRODUCTS INC. HOBOKEN NEW JERSEY

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JUST PUT T WHERE YOU WANT IT

Fig. 928. Pat'd. and Pats. Pending. Drawer is extra.

. . . and your "Hallowell" Work-Bench of Steel will stand firm and steady without costly, time-consuming bolting to the floor. "Hallowell" Work-Benches of Steel are built rigid—positively won't "walk" or wobble on the job. Can be readily moved or joined end to end. 1367 ready-made interchangeable combinations to meet individual job requirements.

HALLOWELL SHOP EQUIPMENT

For use where steel is war-restricted, we are now making "Hallowell" Duration Type Work-Benches of wood.

Write for illustrated bulletins

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 606
— BRANCHES —
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO
OVER 40 YEARS IN BUSINESS

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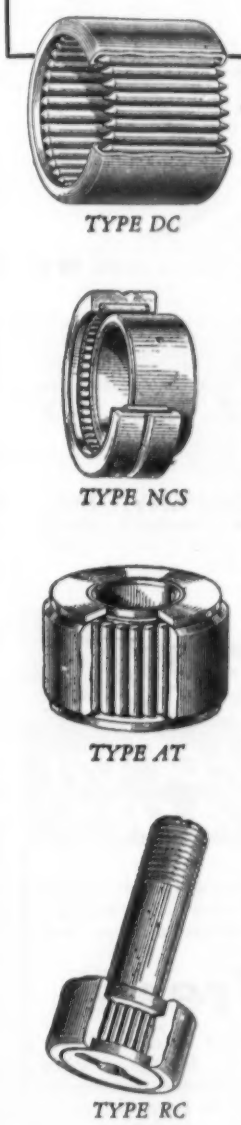
Small Compact Size Features of Needle Bearings



TYPE DC

TYPE NCS

TYPE AT

TYPE RC

REQUIRE LITTLE OR NO MORE SPACE THAN A PLAIN BEARING OF COMPARABLE RATING

One of the outstanding advantages of Torrington Needle Bearings is their exceptionally small size in relation to their unusually high radial load carrying capacity.

The use of a full complement of small diameter rollers within a single retaining raceway—the basic design principle of all Torrington Needle Bearings—has provided the advantage of anti-friction operation within space limits no larger than required for a sleeve or plain bushing.

The small size which characterizes the Needle Bearing also contributes to efficiency and economy of product design in other important ways: it facilitates compact design; simplifies housing structures, frequently permits reduction in overall size; contributes to lighter weight; and through one or more of these advantages—makes for greater efficiency and lower cost.

RANGE OF SIZES AVAILABLE

Type Needle Bearing	Minimum Shaft Diameter	Maximum Shaft Diameter
DC	.1875"	3.500"
NCS	.6250"	5.500"
AT*	.1900"	1.000"
RC	.2500**	1.500**

*Size range to fit Standard AN Bolts Nos. 3 to 16.
**Indicates OD of stud on cam-follower. Cam-roll diameters range from .6875" to 4.000".

If you are planning new products or design improvements in old, it will pay you to investigate fully the advantages in the use of Needle Bearings. Our engineering department will welcome the opportunity to cooperate in developing designs or assist in the selection of the correct Needle Bearing for your requirements.

THE TORRINGTON COMPANY
TORRINGTON, CONN.
THE TORRINGTON CO., BANTAM BEARINGS DIVISION
SOUTH BEND 21, IND.
"Makers of Needle Bearings and Needle Bearing Rollers"
New York Boston Philadelphia Detroit
Cleveland Seattle Chicago San Francisco
Los Angeles Toronto London, England

TORRINGTON NEEDLE BEARINGS

▲ Mention Item NED-1654 when writing ▲

▲ Mention Item NED-1656 when writing ▲

Time-cramped plants all over the country are adopting this efficient, positive-action switch—for greater production—for added safety. Leaves both hands free for work. A must for machines that are switched on and off frequently. MOMENTARY OR MAINTAINED CONTACTS IN ALL MODELS. Rated at 20 Amps—125-250 volts, A.C.-D.C. 10 Amps—440-475 volts, A.C., up to 2 H. P. Double-pole and three-pole mechanism. 3-Phase Models rated up to 2 H. P. 575 Volts, A.C.

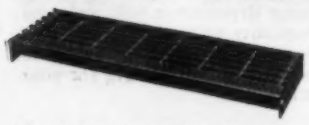
We Welcome Specifications on Special Requirements. Write Today for Bulletin.

SIMONDS MACHINE COMPANY, INC.
33 VIKING TERRACE SOUTHBRIDGE, MASS.
MANUFACTURER'S AGENTS—SOME TERRITORIES OPEN

▲ Mention Item NED-1657 when writing ▲

KLEMP Steel Stair Treads

Guard most vital points of your traffic. Prevent accidents—fire—destruction—loss of time and production!

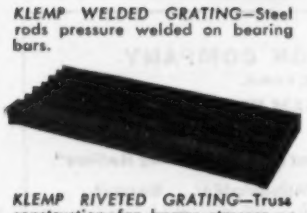


KLEMP WELDED GRATING—Steel rods pressure welded on bearing bars.

Insure *utmost* in solid non-skid security of footing. Lifetime service practically maintenance free. Easy to clean and paint.

KLEMP PRODUCTS FOR ALL TRAFFIC

HEXTEEL—
Heavy Duty Surface Armor
FLOORSTEEL—
Rolls out like a rug
STEEL GRATINGS
Send for Complete Catalog
Write



KLEMP RIVETED GRATING—Truss construction for heavy stresses.

WM. F. KLEMP COMPANY
"Steel Flooring Specialists"
6607 S. Melvina Ave. Chicago 38, Illinois

▲ Mention Item NED-1658 when writing ▲

New Processes & Materials

PREFINISHING CLEANER

Previously restricted for exclusive use by certain war plants, Oakite compound No. 86 is now released to all metal working plants and finishing shops. It is especially designed to facilitate preparation of steel for organic finishing by improving adhesion of subsequent coating of paint, lacquer or other finish.

This acid type detergent removes light spinning compounds, drawing lubricants, machining oils, finger marks, shop dirt and similar materials, eliminating need for preliminary alkaline degreasing. Compound also imparts microscopic crystalline protective coating on work to assure firm bond of subsequent finish. This coating also acts as rust inhibitor and protects parts against rusting between operations. Made by **Oakite Products, Inc.**, 32G Thames St., New York 6, N. Y.

▲ Mention Item NED-1659 when writing ▲

BALANCING COMPOUND

Particularly designed for balancing of electric motor armatures, R-943 balancing compound is supplied in either paste or soft putty form for application with hands or knife. It will set in air at room temperatures in about two hours to condition such that it will not be affected by subsequent applications of insulating varnishes. It does not, however, attain its maximum hardness and mechanical strength unless subjected to baking temperature of 135 degrees Fahr.

This material is also finding applications for certain types of filling operations, such as coil margins and small interstices where its adhesive qualities, low coefficient of expansion and high mechanical strength are important. It is normally supplied in buff color, but may be furnished in black if desired. Made by **Sterling Varnish Co.**, 163 Ohio River Blvd., Haysville, Pa.

▲ Mention Item NED-1660 when writing ▲

FINISHING PROCESS

Eliminating tedious hand finishing and deburring operations, Roto-Finish process deburrs machined metal alloy parts and will prepare metal surfaces for plating without need for polishing or buffing by hand. Parts may range in size from smallest up to those weighing 75 pounds. Radii obtained are claimed to be more uniform than those burred by hand.

Forgings, castings, stampings and machine parts of every conceivable shape are finished without loss of blueprint tolerance. Process uses controlled rotary action, as well as special chips and compounds. Process is owned and serviced by **The Sturgis Products Co.**, 203 Jacob St., Sturgis, Mich.

▲ Mention Item NED-1661 when writing ▲

A COMPLETE CURE FOR MOTOR BURNOUTS

The simplest, surest cure for motor burnouts is to buy motors that have a built-in Klixon Protector.

This simple, inexpensive protector guards a motor's life... never letting it overheat and burnout... yet always allowing the motor to run at peak capacity. Here's how it works.—Overload a motor until it becomes dangerously hot and the Klixon Protector automatically clicks the power "off" until the motor cools to safety... then it turns the power "on", either automatically or by manual reset, depending on the type of protector you specify.

Stop putting up with motor burnouts, insist on Klixon built-in Protectors with every motor you buy. Your supplier can furnish motors with Klixon Protectors... A.C. all sizes; D.C. up to 30 volts.

KLIXON
MOTOR PROTECTORS

SPENCER THERMOSTAT CO., ATTLEBORO, MASSACHUSETTS

▲ Mention Item NED-1662 when writing ▲

BAY STATE BUILDS Extra Safety Into PORTABLE SNAGGING WHEELS

Cross-section of Bay State Resinoid Cup Wheel

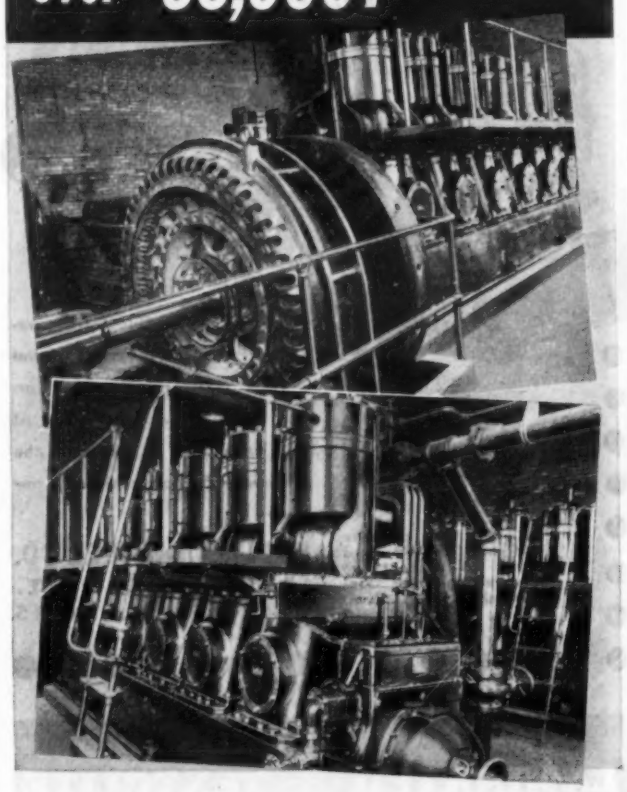
BAY STATE Portable Snagging Wheels cut fast and cool—and the Resinoid Type provides extra safety because of an exclusive (patent pending) method of imbedding the nut...with reinforcements of a 3/16" diameter wire and finer abrasive around the nut giving strength where it's needed most.

BAY STATE has a complete line of Portable Snagging Wheels in vitrified or resinoid bonds for all speeds and all metals. Write for Folder I for more complete information.

BAY STATE ABRASIVE PRODUCTS CO.
WESTBORO, MASS.
BLUE Z FLASH GRINDING WHEELS FAST and COOL

▲ Mention Item NED-1663 when writing ▲

Just Two Fairbanks-Morse Diesels Saved This Company over $58,000!



In 1934 Cargill, Inc., installed two Fairbanks-Morse Diesels in their terminal grain elevator at Minneapolis, Minnesota.

Since then—

★ This Fairbanks-Morse equipment has generated over 6,500,000 kilowatt hours
★ Has reduced power costs by more than 50%
★ Has saved over $58,000 in operating costs
★ Is now showing a *net* profit of $7,000 a year

That's the record of two Fairbanks-Morse Diesels in a plant where power demand fluctuates sharply with high peaks and comparatively small energy consumption. It is a record that combines substantial savings with outstanding performance.

If you need more power—lower-cost power, write Fairbanks, Morse & Co. and let their Engineering Department study your needs. There is no obligation. Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY WAR BONDS

FAIRBANKS-MORSE
DIESEL ENGINES, PUMPS, MOTORS, GENERATORS, WATER SYSTEMS, SCALES, STOKERS, FARM EQUIPMENT, RAILROAD EQUIPMENT
Diesels

▲ Mention Item NED-1664 when writing ▲

New "Wood" Locker Unit Accommodates 12 in 5 feet

The new hardwood and plywood Vogel-Peterson Industrial Lockers come in both single and double (back to back) units that accommodate for 12 or 24 persons in every opening feet. Double locker room capacity and save valuable floor space for productive use. Provide each employee with a spaced coat hanger, an individual ventilated hat shelf and a 12 in. x 12 in. locker for lunch, micrometers, drawing instruments or personal effects.

VOGEL-PETERSON Wardrobe Equipment is provided for factory, shop and office—comprises a complete line of single and double faced locker units, wardrobe racks and non-sagging (6 or 12 place) costumers. Keep wraps "in press", dry and sanitary—exposed to air and light. No crumpled hats or soggy lunches in stormy weather. Prompt delivery.

Write for Catalog and Dealer Propositions

VOGEL-PETERSON CO.
"The Checkroom People"
1243 N. Wolcott Ave., Chicago 22, U. S. A.

The OFFICE VALET

▲ Mention Item NED-1665 when writing ▲

IMMEDIATE SHIPMENT
STEEL BOXES
For Your Production Needs

STYLE 300
STACKING BOX
Just right for your small parts. Light in weight, easy to handle. Equipped with drop handle each end. Runners save wear on bottom of box and act as positive stacking lock.
No. 303 — 9" x 13½" x 4½", — 19 ga. — **$ .75 Ea.**

STYLE 700
STACKING BOX
A light weight box designed for quick identification of contents. Will stack with No. 303. Finished olive green enamel, baked on.
No. 703-OG — 9" x 13½" x 4½" — 19 ga. — **$ .95 Ea.**

Prices F.O.B. Factory, Phila.—Any Quantity!
Order Today—Write, Wire or Phone

AMERICAN METAL WORKS, Inc.
1503 GERMANTOWN AVENUE, PHILADELPHIA 22, PA.

▲ Mention Item NED-1666 when writing ▲

CUT HANDLING COST *of One Man Doing Work of Three*
BARRELS, DRUMS

One man easily loads and transfers up to 800 lb. drum or barrel loads automatically smoothly—saving time and the cost of two or three helpers—with this amazingly simple and strongly built truck. It pays for itself over and over again!

Get full particulars now —
WRITE FOR FREE BULLETIN

SABIN *One-Man* **TRUCK**
Type L-3

DISTRIBUTORS WANTED
The Sabin One-Man Truck sells on sight and is outselling for repeat orders.
The Sabin Machine Co.
4836 Carnegie Ave.
CLEVELAND, OHIO

▲ Mention Item NED-1667 when writing ▲

NEW *Applications*

MACHINING OPERATION

Virtually automatic machining of Stellite and steel simultaneously with same Carboloy cemented carbide cutting tools is being accomplished by Thompson Aircraft Products Co. Part is special steel aircraft valve with Stellite applied to outside diameter of head and seat. Machining is performed on Sundstrand automatic stub lathe having front and rear tool slide.

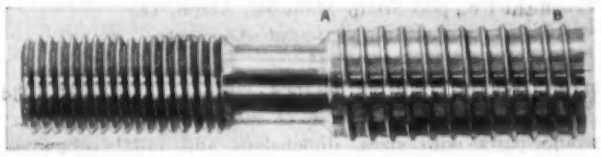
Valve is held on stem end by means of collet in work spindle and supported at head end by tailstock center. Operator pulls in tailstock with handle which locks tailstock. This lever movement also actuates switch mounted on tailstock which starts spindle as well as feed of two slides. Operator has minimum of operations to perform, merely loading and unloading machine. Feed is automatic and machine stops when cycle is completed.

Carbide turning tool makes its cut across both steel and Stellite surfaces at same speed, 80 feet per minute. When tool clears work, forming tool comes in for finishing plunge cut. Excellent results are reported from this combined operation, both as to production and quality of surface finish, as well as tool life. Tools made by **Carboloy Co.**, 11163 E. Eight Mile Rd., Detroit 32, Mich.

▲ Mention Item NED-1668 when writing ▲

THREAD DESIGN

Based upon American National thread and incorporating Dardelet thread principle, A.N.D. thread design takes interference at root of screw thread and flows metal into voids at

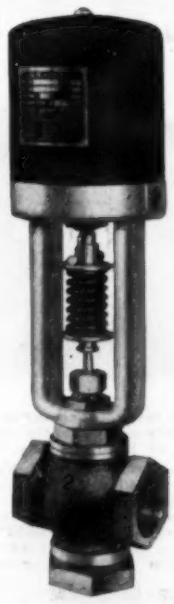


flanks instead of taking interference on blank and flowing metal into voids at root of thread. This places all contacting metal under initial pressure due to cold working of surfaces. Entire thread engagement is sealed against fretting and fatigue life is claimed to be improved.

Screw is stronger in tension and torsion because of larger root diameter. It can be driven into receiving material already tapped American National after threads have been truncated with straight reamer. As screw is driven in, it burnishes truncated threads to form 6-degree taper. For assembly, reamed hole is held to plus or minus 0.0005 inch. Tests are claimed to have shown that this thread offers approximately 25 per cent of resistance to flow of electric current as A.N. threads. Developed by **Dardelet Threadlock Corp.**, 2832 E. Grand Blvd., Detroit 11, Mich.

▲ Mention Item NED-1669 when writing ▲

BARBER-COLMAN
MOTOR-OPERATED VALVES



Barber-Colman electric motor-operated Valves offer a number of advantages for all types of process and other control systems associated with industrial equipment. They will provide reliable shut-off for gases and liquids because of positive power-driven seating, and can also provide accurate motor-driven positioning for proportioning service. Current is consumed only when the valve is changing position. Motors are available for either low-voltage or high-voltage lines. These valves are made in a wide range of sizes and types, for accurate, dependable service.

Write for Bulletin
"CONTROLS for INDUSTRY"

MAXIMUM SERVICE Controls by BARBER-COLMAN COMPANY MINIMUM MAINTENANCE

TYPE FYBA SEMI-BALANCED VALVE

BARBER-COLMAN COMPANY
1206 ROCK ST. • ROCKFORD, ILL.

▲ Mention Item NED-1670 when writing ▲

LOW COST—COMFORTABLE
DAVENPORT
WOOD SOLE SAFETY SHOES

DAVENPORT Wood Sole Shoes are especially designed for use where ordinary leather or rubber soled safety shoes do not offer enough protection. Wooden soles provide sure footing on damp, slippery floors. Hot and rough surfaces cannot injure your workers' feet. Perspiration of the feet is more rapidly dispersed with Wood Sole Shoes.

Comfort as well as foot protection is built into all Davenport Wood Sole Shoes. Vamp and uppers are of pliable oiled grain leather. Counters are made of first grade sole leather. Thick felt insoles provide additional comfort. Soles are of close-grained maple and have correct rock from heel to toe for ease in walking.

All Davenport Wood Sole Shoes are available with Safety Toes.

Wide variety of styles, each designed for a particular industry.

DELIVERY OF SHOES SUBJECT TO WAR REGULATIONS!

F. J. STAHMER SHOE CO.
World's Largest Exclusive Manufacturer of Wood Sole Footwear
2375 BOIES AVENUE DAVENPORT, IOWA

▲ Mention Item NED-1671 when writing ▲

HOW YOU CAN SAVE
Time-Money-Manpower
WITH
EXECUTONE
Communication Systems

EVEN THE BEST-RUN ORGANIZATIONS HAVE THESE PROBLEMS . . . DOES YOURS?

Do you have to keep customers "hanging on" the phone while you get in touch with people in your organization? Do inter-office calls jam your switchboard, causing "busy" signals and delays? Do you constantly waste time trying to locate employees who are away from their desks? Does the distance between your office and remote departments cause delays and mistakes? Do even the simplest instructions to an employee require a "personal interview"?

If *any* of these conditions exist in your organization, *you are losing money!* Why not put a stop to these leaks?

FREE BOOKLET TELLS YOU HOW

Write today for your free copy of the new EXECUTONE booklet. It tells you in brief, simple terms how over 78,000 EXECUTONE installations are saving money, time and manpower...

— by establishing direct and instant conversational contact between various departments . . . even when the person you're trying to contact is not at his desk. (An outstanding EXECUTONE feature.)

— by freeing switchboards for incoming and outgoing traffic, assuring faster telephone service for customers . . . and eliminating the cost of "call backs."

— by speeding up production, conserving manpower, minimizing errors and maintaining closer executive control over every department.

SEND FOR BOOKLET TODAY—USE THIS CONVENIENT COUPON

EXECUTONE, Inc.
415 Lexington Ave., New York 17, N. Y.

Please send me your Free Booklet "E-1" on solving inter-organization communication problems. And include your Survey Chart.

FIRM NAME.....
ADDRESS.....
BY..... TITLE.....

▲ Mention Item NED-1672 when writing ▲

"Industrial"

CUT GEARS
CUT RACKS
CUT SPROCKETS

We can help you meet your schedules. No order too large—none too small. Our equipment, personnel and "know-how" assure you of fast, reliable, precision production in Gears and Racks of any material.

We also cut Sprockets for Roller and Silent Chain Drives and do "job" Precision Surface Grinding. Let us work with you. Send specifications and blue prints for estimates.

The Plant that Quality and Service Built

CHICAGO'S FASTEST GROWING GEAR PLANT

INDUSTRIAL GEAR MFG. CO.
4541 VAN BUREN STREET CHICAGO 24, ILLINOIS

▲ Mention Item NED-1673 when writing ▲

The GROVE Pneumatic Gauge COMPARATOR

GROVE SIMPLICITY ACCURACY SAFETY

The Portable Method of Checking All Types Of Pressure Gauges

- Compact, portable and fully self-contained.
- Built-in high capacity rechargeable air cylinders.
- Precision laboratory test gauges accurate to within ¼ of 1% full scale.
- Completely equipped with tubing, connections and accessories.

Figure the amount of time, trouble and money you save when you check your pressure gauges "in-place" without removing them from their panels or mountings; without disturbing existing line connections. The portable Grove Pneumatic Gauge Comparator gives you this fast accurate means of accurately checking any service gauge in service. Write today for Bulletin 300.

GROVE REGULATOR COMPANY
6533 Green Street, Emeryville, California
Branch Offices:
6044 Navigation Blvd., Houston, Texas—30 Rockefeller Plaza, New York City

GROVE Pneumatic Gauge COMPARATOR

▲ Mention Item NED-1674 when writing ▲

GOOD INVESTMENTS
for the future

United States War Bonds and Super-Silvertop Steam Traps have a common, outstanding advantage. They are both good investments for the future. Besides, War Bonds purchased now will help keep prices down and prevent uncontrolled inflation. War Bonds become a real financial "back log" for the future . . . Super-Silvertop Steam Traps, too, are an investment for the future. These traps begin paying interest through savings from the time of purchase—on installation time, less fittings, less repairs and more years of service . . . Buy War Bonds today, buy Super-Silvertops when you need them.

THE V. D. ANDERSON CO.
1932 W. 96th St. • Cleveland 2, O.

SUPER-SILVERTOP
STEAM TRAPS

▲ Mention Item NED-1675 when writing ▲

NEW Literature AND Catalogs

SHEAVES—4-page illustrated bulletin B6310 describes Magic-Grip sheave—series of six photographs demonstrates fast, easy put on and take off operation of this sheave—issued by Allis-Chalmers Mfg. Co., 6900 Norman St., Milwaukee 1, Wis.

▲ Mention Item NED-1676 when writing ▲

TOILET COMPARTMENTS—12-page illustrated catalog No. 82 contains information on nine types of toilet compartments—three types for wartime installations are made of asbestos board with steel or wood posts and bracing—six types all of steel compartments for postwar installations are also shown—issued by The Sanymetal Products Co., 1719 Urbana Rd., Cleveland, O.

▲ Mention Item NED-1677 when writing ▲

PACKAGING MACHINERY—20-page illustrated bulletin describes weighing, filling, measuring and carton sealing equipment—installation photographs in food plants, grocery chains, metal working plants and other industries—issued by Triangle Package Machinery Co., 917 N. Spaulding Ave., Chicago, Ill.

▲ Mention Item NED-1678 when writing ▲

BLAST CLEANING TABLES—4-page illustrated bulletin No. 99 describes Centri-Blast rotary cleaning tables—tables are semi-automatic and airless, using principle of centrifugal force to drive abrasive with velocity necessary for efficient work—issued by The W. W. Sly Mfg. Co., 4748 Train Ave., Cleveland, O.

▲ Mention Item NED-1679 when writing ▲

SYNTHETIC RUBBER TERMS—8-page booklet is glossary giving pronunciations and meanings of synthetic rubber words—includes only more common chemical terms and some of well established trade names—issued by Hycar Chemical Co., 335 South Main St., Akron, O.

▲ Mention Item NED-1680 when writing ▲

RADIO & ELECTRICAL PARTS—36-page illustrated 1944 catalog covers complete line of radio, electrical and electronic parts with sizes, dimensions and rated capacities, together with list prices—issued by P. R. Mallory & Co., Indianapolis, Ind.

▲ Mention Item NED-1681 when writing ▲

SPRINGS—Illustrated catalog is technical book on springs, their physical properties, uses and specifications—outlines company's facilities and experience—issued by Duer Spring & Mfg. Co., Dept. E, Box 312, McKees Rocks, Pa.

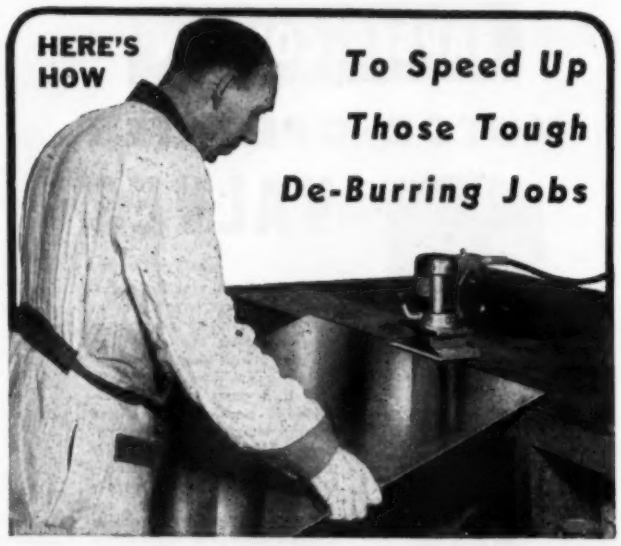
▲ Mention Item NED-1682 when writing ▲

FORGE PRODUCTS—4-page illustrated bulletin presents company's facilities for producing heavy steel and alloy forgings, line shafts, thrust shafts, crankshafts, die blocks, leveling rolls and similar forge products—issued by Titusville Forge Div., Struthers Wells Corp., Warren, Pa.

▲ Mention Item NED-1683 when writing ▲

HERE'S HOW

To Speed Up Those Tough De-Burring Jobs



Easy RECIPROCATING ELECTRIC SANDER

The fast straight line reciprocating action of the EASY Sander mechanically duplicates the approved back-and-forth motion of hand finishers.

Proven ideal for de-burring parts of Alclad or other metals. Work inserted at angle eliminates danger of removing protective coatings. Special pads are available for de-burring both sides of an edge in one operation. The "EASY" is a portable machine but is extensively used with a jig (note illustration) for stationary operation.

WRITE FOR LITERATURE

DETROIT SURFACING MACHINE CO.
7423 W. DAVISON • DETROIT 4, MICH.

▲ Mention Item NED-1684 when writing ▲

FREE FOLDER
ON FAST METAL CUTTING

Here is a 4 page, illustrated folder that gives complete information on the Radiac Abrasive Cut-off machine and its sensational speed in cutting metals and other material—the *fastest* way to cut off bars, rods and tubes.

This folder explains how a Radiac Cut-Off Machine, equipped with a Radiac Abrasive Cut-Off Disc will slice through a 1" round of High Speed Steel in 2½ seconds—and gives other examples.

Don't miss this description of Radiac machines and Discs for faster cutting and decreased costs, plus competitive applications and advantages, and information on the many types of Radiac machines available.

*T. M. Reg. U. S. Pat. Off.

A. P. DE SANNO & SON, INC.
Machine Sales Div., Dept. 50
108 S. 16th Street, Philadelphia 2, Pa.
Plant, Phoenixville, Pa.
Copyright 1944. A. P. de Sanno & Son, Inc.

RADIAC ABRASIVE CUT-OFF MACHINES

MAIL THIS COUPON TODAY!

• Please send me Free the Radiac Folder, "How to Cut Metal Like Cheese":

Name_____
Title_____
Company_____
Address_____

▲ Mention Item NED-1685 when writing ▲

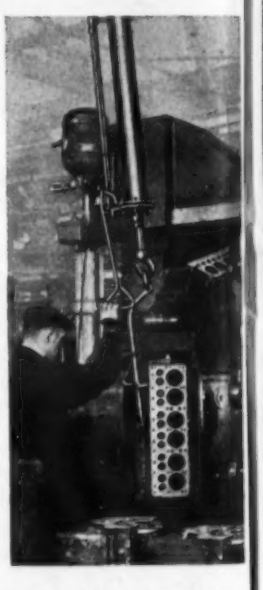
FOR MORE WAR WORK WITH FEWER WORKERS
Use CURTIS AIR HOISTS

You can release workers for other jobs, reduce worker fatigue, and, at the same time, speed up production—where almost any lifting problem is involved—with Curtis Air Hoists.

Curtis Air Hoists provide these advantages:

- Low first cost and low operating expense
- Only two moving parts
- Smooth, fast, accurate control
- No chains to stretch or wear out
- Capacities up to 10 tons
- Pendant or bracketed types

For full information, write today for free booklet, "How Air Is Being Used in Your Industry."



FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

CURTIS PNEUMATIC MACHINERY DIVISION
of Curtis Manufacturing Company
1979 Kienlen Avenue, St. Louis, Mo.

▲ Mention Item NED-1686 when writing ▲

★ ★ ★ the New ALDRICH-GROFF
CONSTANT SPEED—CONTROLLABLE CAPACITY
VERTICAL TRIPLEX PUMP...

For Services Including...

- BOILER FEED
- DESUPERHEATING
- PIPE LINES
- PROPORTIONING
- PROCESS AND STILL CHARGING
- HYDRAULIC PRESS

For constant speed A.C. electric motor or turbine drive. Low starting torque, with delivery infinitely variable from 0 to maximum rated capacity. For installations requiring automatic or remote manual control of output or pressure. Sizes from 11 to 100 HP with discharge pressures from 200 to 15,000 p. s. i.

Send for Data Sheet #65

THE ALDRICH PUMP COMPANY
4 GORDON STREET • ALLENTOWN • PENNA.

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CORDLEY

Electric

WATER COOLERS

The major part of Cordley production has been required by U.S. Navy and Maritime ships. Uncle Sam confirmed the judgment of industrial managers who always recognized the necessity for adequate drinking water facilities for employees. Cordley Electric Water Coolers now released for military and industrial requirements. Write us about your needs.

Remember the name

CORDLEY AND HAYES

457 FOURTH AVE., NEW YORK 16, N. Y.

Specialists on Drinking Water Equipment Since 1889

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SOLVES YOUR WARTIME *Storage Problems*

Lyon Storage Units...ENGINEERED IN WOOD include *Adjustable Shelving* for production materials and tools, *Cabinets* for office supplies, *Wardrobe Cabinets*, "*Shoprobes*" and *Lockers* for clothing. Steadily increasing sales and big repeat orders prove the sound construction, and practical design of these reasonably priced Lyon Storage Units. Recent increases in manufacturing facilities enables us to give you QUICK DELIVERY on all three. Write for Catalog.

LYON METAL PRODUCTS INCORPORATED

322 Madison Avenue, Aurora, Illinois

Branches and Distributors in All Principal Cities

▲ Mention Item NED-1689 when writing ▲

Use SHENANGO-PENN *Centrifugal Castings*

MEET EXACTING ARMY, NAVY, AIR CORPS AND ENGINEERS' REQUIREMENTS

THE action of centrifugal force gives Shenango-Penn castings greater strength, greater density and greater elongation. In effect, it results in physical characteristics and qualities approaching those of a forging in many alloys.

Our standard alloys, established to meet government and society specifications, will cover all requirements of every industry. For more information on Shenango-Penn centrifugal castings in *all bronzes, monel metal and alloy irons* write or wire today. Ask for Bulletin 143.

Bearings • Bushings • Pump & Cylinder Liners
Rings • Propeller Shaft Sleeves • Washers

SHENANGO-PENN MOLD COMPANY
841 West 3rd Street
Dover, Ohio

▲ Mention Item NED-1690 when writing ▲

New Literature—Continued

SHEET METAL PUNCHING—8-page illustrated brochure No. PS describes Wales Plate Set System for punching sheet metal designed specially to step-up aircraft production—system consists of Walesite plate sets and "PS" punch assemblies and dies—issued by Wales-Strippit Corp., 363 Payne Ave., North Tonawanda, N. Y.

▲ Mention Item NED-1691 when writing ▲

WELD INSPECTION CHART—Illustrated arc welding inspection chart is designed so that operators and inspectors can tell at glance whether welds are being properly made—results obtained in making fillet and butt welds are pictured —Fleet-Fillet" welding technique is described—issued by The Lincoln Electric Co., Dept. AP-574, 12818 Coit Rd., Cleveland, O.

▲ Mention Item NED-1692 when writing ▲

AIR CIRCUIT BREAKERS—32-page illustrated catalog No. 1002 covers selection and construction of low-voltage air circuit breakers—information is also presented on many types of tripping mechanisms—issued by I-T-E Circuit Breaker Co., 1898 Hamilton St., Philadelphia 30, Pa.

▲ Mention Item NED-1693 when writing ▲

AUTOMATIC TAPPING—12-page illustrated booklet, "Guide for Production Tapping", is composed of various useful data relating to automatic tapping as performed on lead screw tapping machines—issued by Cleveland Tapping Machine Co., 1723 Superior Ave., Cleveland, O.

▲ Mention Item NED-1694 when writing ▲

INDUSTRIAL EQUIPMENT—12-page illustrated bulletin presents information on Agitair products—included are air diffusers, ranges, bake ovens and stoves, air exhausters, air filters, hot water generators, heat baffles for oil burners and hot gas generating furnaces—issued by Air Devices, Inc., Dept. D., 17 East Forty-second St., New York 17, N. Y.

▲ Mention Item NED-1695 when writing ▲

BLANKS FOR THREAD MILLING CUTTERS—6-page illustrated bulletin No. CB-43 lists over fifty standard blanks for thread milling cutters carried in stock ready for grinding to users' specifications—issued by Detroit Tap and Tool Co., 8432 Butler St., Detroit 11, Mich.

▲ Mention Item NED-1696 when writing ▲

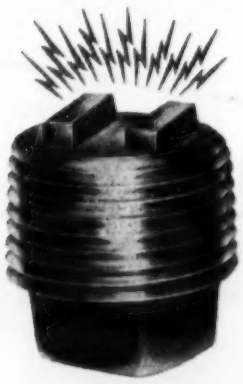
SEWAGE & TRASH PUMPS—32-page illustrated bulletin No. 6201 covers line of dry-pit sewage and trash pumps for municipal and industrial use—includes selection tables, installation drawings and photographs and specifications—issued by Yeomans Bros Co., 1416 N. Dayton St., Chicago, Ill.

▲ Mention Item NED-1697 when writing ▲

WIRE CLOTH—96-page book, "Industrial Wire Cloth, Engineering Data and Price List" explains simplified ordering procedure facilitating shipments and contains explanations of different types of weaves in wire cloth, metals and alloys available and laboratory and research facilities of company—issued by The C. O. Jelliff Mfg. Corp., Southport, Conn.

▲ Mention Item NED-1698 when writing ▲

a PLUG for your post-war products



Include Lisle Magnetic Drain Plugs in your plans for post-war products. The Lisle Plug contains a powerful magnet which pulls any iron or steel particles out of a lubricant. Cuts down wear of gears, bearings and other vital parts; reduces service problems. Send for complete application data.

LISLE CORPORATION
Box 1011 Clarinda, Iowa

Lisle Magnetic DRAIN PLUGS

▲ Mention Item NED-1699 when writing ▲

SAVE TIME, METAL, MONEY & LABOR WITH MEYERCORD

DECALCOMANIA NAMEPLATES

Meyercord Decal nameplates, instructions, insignia, etc., are widely used on tanks, combat and merchant ships, planes and communication equipment. Any size or design can be produced in durable, washable colors. No screws, bolts or rivets required. Meyercord Decals are easily applied to flat, convex or concave surfaces . . . for interior or exterior use . . . on metal, wood, fabric, rubber . . . even CRINKLED FINISHES! Free designing and technical service. For literature address Department 13-2.

THE MEYERCORD CO.
World's Leading Decalcomania Manufacturer
5323 West Lake Street
Chicago 44, Illinois

▲ Mention Item NED-1700 when writing ▲

SERVES THEM RIGHT!

Bombs are "safely delivered" on Rabaul, New Britain, by a Mitchell B-25. Signode strapped supplies, loaded by women at ports of embarkation arrive safely to maintain the air forces, furnish them with ammunition.

● American forces are ready to serve destruction, thanks to the safe arrival of war materials.

To serve the armed forces with supplies shippers have learned to depend on the readiness of nearby Signode representatives to advise them on the latest and best methods of safe shipping.

For no matter *where* your plant is located, Signode service is available through strategically located offices in all industrial areas. Your nearby Signode engineer stands ready to suggest practical solutions to your shipping problems. *Call him today.*

SIGNODE STEEL STRAPPING COMPANY
2532 N. Western Ave., Chicago 47, Ill.

Brooklyn: N. Y.: 378 Furman St. San Francisco, Calif.: 487 Bryant St.
Signode Steel Strapping Meets All Federal Strapping Specifications
31 Branch Offices Throughout The United States and 14 in Foreign Countries

▲ Mention Item NED-1701 when writing ▲

You can perform real miracles with this

DURO 18-inch DRILL PRESS

Here's a new husky low-cost DURO drill press that can handle efficiently a wide range of drilling and tapping jobs—or be easily adapted for many specialized operations. It incorporates new exclusive features that make it one of the outstanding drill press values. Has six-spline telescopic, self-aligning spindle that reduces play. Production table has 14" x 18" machined surface. Heavy base with 12" x 12" machined surface. Specifications include: ¾" capacity. No. 2 Morse Taper. New Departure Ball Bearings. Speed range 425 to 2030 R.P.M. Spindle travel—5". Drills to center of 18" circle. Maximum distance from base to spindle—49". Maximum distance from table to spindle—19". Overall height—68". Size of overall base—18" x 28½". Diameter of column—3½". Also available in bench model.

SEND FOR NEW CATALOG

The DURO line includes a complete range of low-cost single and multi-spindle Drill Presses, Metal-Cutting Band Saws, Circular Saws, Jointers, Router, Shapers, Grinders, Lathes, Scroll Saws, Flexible Shaft Units, and Portable Electric Drills. Mail coupon today to:

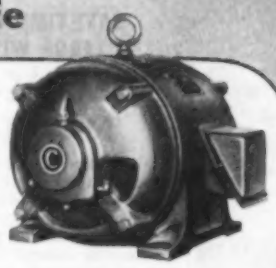
DURO METAL PROD. CO.
2682 N. Kildare, Chicago 39, Ill.

DURO TOOLS
MACHINE TOOL DIVISION

ALSO MAKERS OF DURO HAND TOOLS

▲ Mention Item NED-1702 when writing ▲

The *Extra Protection* of CENTURY FORM J MOTORS Means Long, Uninterrupted Production Life



The Century Form J Motor has many features that contribute to longer motor life and more accurate performance of the driven machine. The upper half of the motor is closed—protecting it against falling solids and dripping liquids—helps keep out dirt, chips, cutting oils, tools, etc. Its smooth, well-proportioned contours make it easy to keep clean, as well as easy to look at.

The Century Form J Motor is unusually free from vibration, which is important to quietness, accuracy, and precision of the machine on which it is mounted. A very effective ventilation system keeps the bearings and windings cool—adds extra life.

Today—and tomorrow, it will pay you to remember Century Motors for all your electric motor requirements.

Century MOTORS

CENTURY ELECTRIC CO.
1806 Pine Street St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

352

▲ Mention Item NED-1705 when writing ▲

BLACK DIAMOND
• PRECISION DRILL GRINDERS •

YOU CAN'T GRIND SMALL DRILLS ACCURATELY BY HAND — BUT IT'S A MECHANICAL CERTAINTY WITH A BLACK DIAMOND

WHETHER you use drills singly or in multiple, by the hundreds or thousands this moderately priced machine will keep any supply sharp and always available.

With a Black Diamond even the most inexperienced apprentice can keep all small drills sharp to meet any emergency—with lips accurately ground to exactly the same length—at the proper angle and with correct clearance for fast, precision drilling.

Black Diamond Grinders cut 50% and more on grinding costs, save expensive drill stock, reduce drill breakage and actually pay for themselves in a short time.

SAWS BLACK DIAMOND TOOLS

When you order be sure to include the Web Thinning Attachment which accurately grinds Notched, Colton, or so called Crank Shaft points.

Write for folder today.

BLACK DIAMOND SAW & MACHINE WORKS, Inc.
NATICK, MASSACHUSETTS

▲ Mention Item NED-1706 when writing ▲

STERLING 1000 ELECTRIC PORTABLE SANDER

ORBITAL MOTION of the sanding pad on the Sterling 1000 assures faster, more precise work on wood, metal or plastics than hand or ordinary machine sanding!

Covers entire range of abrading from coarse sanding to lapping and finishing. Vibrationless . . . . easy to use. Write for new booklet describing important additional features.

For air-driven sanding ask about the Sterling Speed-Bloc Sander

STERLING TOOL PRODUCTS CO.
369 EAST OHIO STREET • CHICAGO 11, ILLINOIS
Los Angeles and Toronto

▲ Mention Item NED-1707 when writing ▲

New Literature—Continued

MATERIALS HANDLING—4-page illustrated folder presents information on Payloader tractor shovel, model HL—unit has 1-cubic yard capacity, 8000-pound drawbar pull and 3000-pound hoist capacity—issued by The Frank G. Hough Co., Libertyville, Ill.

▲ Mention Item NED-1708 when writing ▲

DUST COLLECTORS—16-page illustrated catalog No. 26 describes line of self-contained units and accessories for carrying away dust-laden air around grinding, cutting and polishing wheels—typical installations are shown—issued by Torit Mfg. Co., 298 Walnut St., St. Paul, Minn.

▲ Mention Item NED-1709 when writing ▲

PICKLING AGENT—4-page bulletin describes Acid Addition agent which is used in sulphuric, hydrochloric and other non-oxidizing pickles to promote better pickling—issued by The Enthone Co., Dept. NED, 442 Elm St., New Haven, Conn.

▲ Mention Item NED-1710 when writing ▲

DECIMAL EQUIVALENT CHARTS—7 x 15 and 13 x 27 inch decimal equivalent chart calendars are now available upon request on company's letterhead—issued by Dayton Rogers Mfg. Co., 2837 Twelfth Ave. S., Minneapolis 7, Minn.

▲ Mention Item NED-1711 when writing ▲

WIRE ROPE—60-page catalog No. G-15 is wire rope buyers guide—contains information on conservation and care of wire rope—copies available on request on company letterhead—issued by Macwhyte Co., 2932 Fourteenth Ave., Kenosha, Wis.

▲ Mention Item NED-1712 when writing ▲

METALLIZING PROCESS—80-page illustrated handbook covers every phase of metallizing process from surface preparation to spraying techniques and finishing of sprayed metal coatings—price is $1.00 post paid—issued by Metallizing Engineering Co., 38-14 Thirtieth St., Long Island City 1, N. Y.

▲ Mention Item NED-1713 when writing ▲

PILOT LIGHTS—24-page illustrated bulletin describes Dialco signal and pilot light assemblies—specifications are listed for various models shown—issued by Dial Light Co of America, Inc., 90 West St., New York 6, N. Y.

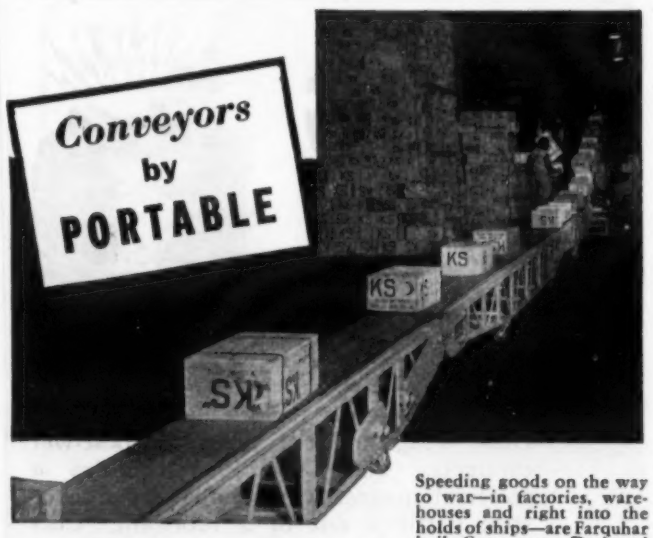
▲ Mention Item NED-1714 when writing ▲

BALL BEARINGS—14-page illustrated booklet No. ND-A57 outlines all the steps in service procedure for ball bearings from dismounting, cleaning and judging condition to remounting—issued by New Departure Div., General Motors Corp., Bristol, Conn.

▲ Mention Item NED-1715 when writing ▲

ELECTRONIC TUBES—4-page illustrated bulletin No. ET-12 is quick selection chart of electronic tubes for industry—issued by Tube Div., General Electric Co., Schenectady, N. Y.

▲ Mention Item NED-1716 when writing ▲



Speeding goods on the way to war—in factories, warehouses and right into the holds of ships—are Farquhar built Conveyors. Designed to handle any type of material—in boxes, bags or loose—either portable or stationary conveyors are cutting down necessary man hours in every place they are serving. Your handling problems can be speeded with Farquhar Material Handling Conveyors. Want evidence?

ARMY E NAVY

Farquhar

PORTABLE MACHINERY DIVISION
A. B. FARQUHAR COMPANY
204 DUKE STREET • YORK, PA.

▲ Mention Item NED-1717 when writing ▲

Exide's LIGHTGUARD

COMPACT and COMPLETE EMERGENCY LIGHTING UNIT

Despite all precautions of utility companies, disasters beyond their control can plunge war plants, arsenals, power stations, and other vital areas into darkness. Avoid such dangers with an Exide LIGHTGUARD. It stands by for instant, automatic lighting protection.

An Exide LIGHTGUARD is a good investment. Here's why:

1—No fixtures or wiring needed, except simple cord and plug connection to A. C. supply.
2—Low price.
3—Lights an area of 7500 square feet.
4—Self-contained, automatic operation and charging.
5—Long-life, thick plate Exide Battery. Visible pilot bulb.
6—Selenium trickle charger automatically maintains battery charge from ordinary A.C. supply.
7—Can be used as a portable light.

Additional details on this contribution to industrial safety will be supplied upon application to Exide.

Exide EMERGENCY BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Phila., 3
Exide Batteries of Canada, Limited, Toronto

▲ Mention Item NED-1718 when writing ▲

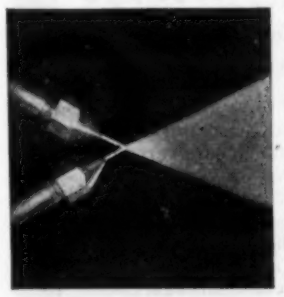
WaterFOG puts out fires IN OIL

The smaller a water droplet is, the quicker it will absorb heat from fire.

That's why WaterFOG makes water effective on oil fires. Its water particles are so tiny—having many times greater surface area than an equal amount of water in spray or stream form—that they cool the fire faster.

Also, being lighter, WaterFOG floats in the combustion area, picking up its full complement of heat from the burning vapors and from the liquid's surface. Then, as it changes to steam, it expands, casting a smothering blanket over the fire.

The fire is quenched . . . vaporization is retarded . . . oxygen is kept out. Yet there is no agitating of the liquid, no spreading of the fire. "Flashback" is prevented, and with smaller quantities used, water damage is restricted. Write for Bulletin 123.



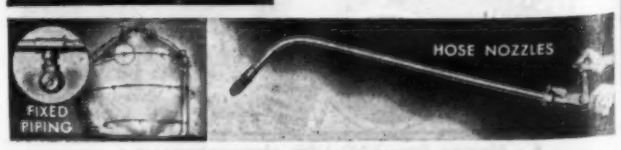
WaterFOG is created by specially-designed Rockwood heads and nozzles, in which impinging streams break water up into FOG. Rockwood engineers will develop the proper particle size, fog pattern and velocity for your conditions. Available in the form of fixed piping installations, hose nozzles and applicators.

Approved by Underwriters' Laboratories and Associated Factory Mutuals—used by Navy, Coast Guard, U.S. Maritime Commission, hundreds of industrial plants. *Executives!* A color movie (16 mm.) showing tests of Rockwood WaterFOG is available.

ROCKWOOD SPRINKLER CO., 44 Harlow St., Worcester 5, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

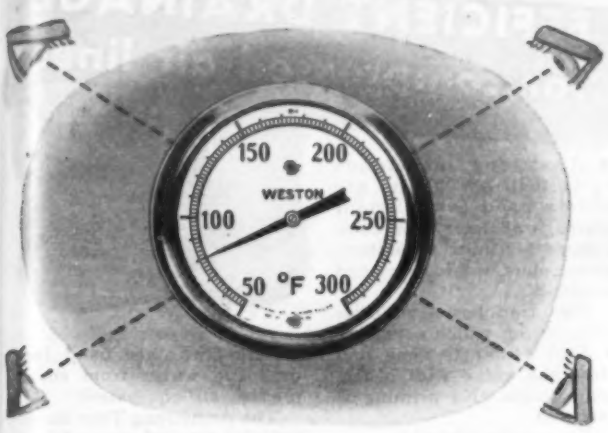
ROCKWOOD WaterFOG

Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires



▲ Mention Item NED-1719 when writing ▲

The "eyes" have it . . .



The WESTON gauge-type thermometer is *far more readable*. But the big point is that *seein's believin'* whenever you read a WESTON. Because its high initial accuracy (1% over the entire scale) is maintained over long periods of time. The reason is . . . even the temperature element in the WESTON is all-metal! There is no gas, no liquids, no fragile parts. Thus it can withstand vibration or other mechanical abuse without damage or without affecting its accuracy. It's easier to install, too, and no corrections are necessary for capillary or elevation.

Booklet describing these rugged and dependable thermometers, including types, stem lengths, prices, etc., gladly sent on request. Weston Electrical Instrument Corporation, 663 Frelinghuysen Ave., Newark 5, N. J.

WESTON *All-Metal* TEMPERATURE GAUGES

▲ Mention Item NED-1721 when writing ▲

Accuracy Assured!

BY THE SMITH PROCESS OF PRODUCING FLAT SURFACES

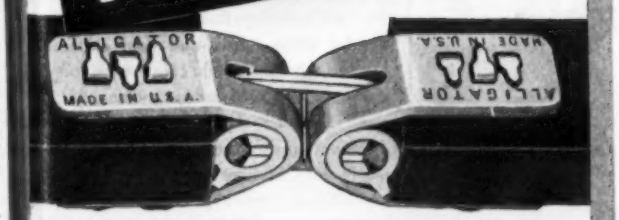
WRITE, WIRE or PHONE

SMITH TOOL & ENGINEERING CO.
856 SANDUSKY AVE., BUCYRUS, OHIO

▲ Mention Item NED-1722 when writing ▲

Now you can fasten V-belts by using

ALLIGATOR
TRADE MARK REG. U.S. PAT. OFFICE
V-BELT FASTENERS



● Alligator V-belt Fasteners and the open-end V-belting now being made by belting manufacturers, will enable you to make up multiple V-belt drives from roll belting. These fasteners have been on the market 9 years and are now being used on a wide variety of drives.

Available for B, C, D sizes of belt for industrial use and 1-in. and 2-in. sizes for railroad use. These fasteners, however, should not be used for repairing endless cord V-belts.

Bulletin V-205 will give you complete details as to where and how these fasteners are used, sizes, list prices, tools and application instructions. A copy will be mailed at your request.

Order from your supply house

FLEXIBLE STEEL LACING COMPANY
4664 Lexington Street, Chicago 44, Illinois

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

▲ Mention Item NED-1723 when writing ▲

New Literature—Continued

METALLURGICAL EQUIPMENT—Illustrated 30th anniversary catalog traces history of metal industries in past 30 years and points out part of company in these developments—service of organization is emphasized—issued by Claud S. Gordon Co., 3000 S. Wallace St., Chicago 16, Ill.

▲ Mention Item NED-1724 when writing ▲

STEEL CLEANER—4-page bulletin is descriptive of alkali steel cleaner called Cleaner 100—cleaner is designed for cleaning steel by either immersion or electrolytic means—issued by The Enthone Co., Dept. NED, 442 Elm St., New Haven, Conn.

▲ Mention Item NED-1725 when writing ▲

LUMBER INDUSTRY—57-page illustrated third biennial edition of "Lumber Industry Facts" is intended to aid understanding of forest industries, determination of sound public policy and provision of dependable sources of business and employment—information was drawn from government and industry sources—issued by Statistical Div., National Lumber Manufacturers Assoc., 1319 Eigtheenth St., N. W., Washington 6, D. C.

▲ Mention Item NED-1726 when writing ▲

CARBIDE TOOLS—4-page illustrated stock tool bulletin No. 44-1 presents diagrams, photographs and specifications of single point diamond ground carbide tools—issued by Tungsten Carbide Tool Co., 2661 Joy Rd., Detroit 6, Mich.

▲ Mention Item NED-1727 when writing ▲

CUTTER SHARPENING—16-page illustrated bulletin No. HT-43 was compiled to enable faster, more accurate sharpening of thread-milling cutters and gear hobs—contains tables of equivalent offset distances for all angles of rake from 1 to 25 degrees in 1-degree steps and for all sizes of cutters from ⅜ to 7-inch outside diameter in 1/16-inch steps—issued by Detroit Tap & Tool Co., 8432 Butler St., Detroit 11, Mich.

▲ Mention Item NED-1728 when writing ▲

POWDER METALLURGY—32-page illustrated booklet covers advantages and latest applications of powdered metal parts—in addition to catalog listing of standard shapes and sizes available, technical data on performance, installation and care is included—issued by Keystone Carbon Co., 2035 State St., Saint Marys, Pa.

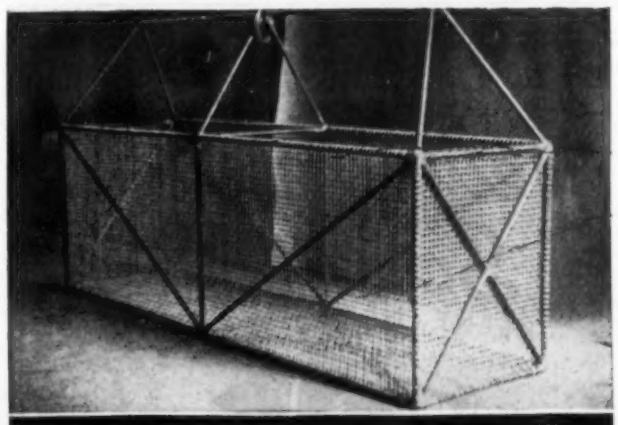
▲ Mention Item NED-1729 when writing ▲

ELECTRONIC CONTROL—12-page illustrated bulletin No. GEA-4126 explains fundamental principles of electronic tubes and their operation, describes construction of thyratron tube and lists functions of eight widely used industrial-type tubes—issued by General Electric Co., Schenectady, N. Y.

▲ Mention Item NED-1730 when writing ▲

GYRATORY SIFTER—15-page illustrated bulletin No. B-6124A is descriptive of low-head gyratory sifter which has wide application in flour and cereal milling industries for resifting flour and is also used to sift light chemicals, food products, hard rubber, wood flour, flaked graphite, and other materials—issued by Allis-Chalmers Mfg. Co., 6900 Norman St., Milwaukee 1, Wis.

▲ Mention Item NED-1731 when writing ▲



for PICKLING & WASHING
AIRCRAFT PARTS
CAMBRIDGE
MONEL METAL BASKETS

No job too big or too small in metal baskets for us to handle, in ordinary steel or other metals. Write for FREE CATALOG. Our engineers are readily available. Call or wire.

THE CAMBRIDGE WIRE CLOTH CO.
CAMBRIDGE 13, MARYLAND

▲ Mention Item NED-1732 when writing ▲

BEFORE YOU PUT HOLES IN
SHEETS
ANGLES
CHANNELS

BY *any* METHOD . . . *investigate*

WALES
HOLE PUNCHING EQUIPMENT

FEATURES

1. Usual time-consuming adjustments of conventional set-ups are eliminated.
2. Punch and die held in alignment by holder.
3. Each unit is independent and self-contained.
4. Straight line, staggered or scattered patterns punched with same units.
5. Same units may be used interchangeably on press brake & stamping presses.
6. Nothing attached to press ram.
7. Individual units may be instantly removed or reset.
8. Interchangeable punches.
9. Die setting time and press "down time" reduced to minutes.
10. Same units may be used and reused in active patterns.

● Take up this invitation by putting your hole punching problems up to Wales-Strippit.

Hundreds of metal fabricators are now using Wales Equipment *profitably*.

Wales-Strippit manufactures a complete line of hole punching units and are prepared to develop and manufacture hole punching equipment for special operations and techniques.

"There's Always Something New in the Wales Line."

Write for Catalog C.

WALES-STRIPPIT CORP.
363 PAYNE AVENUE NORTH TONAWANDA, N. Y.

▲ Mention Item NED-1733 when writing ▲

War goods pile up on foreign docks like this!

Help your soldiers find the needles in the haystacks!

Your goods for fighting men will land on crowded docks like this—on time perhaps—*but* are they marked so they can be quickly *found* in a haystack like this and forwarded without a moment's unnecessary delay to your boy at the front? His very life may depend on their quick arrival at the right spot.

Packing lists attached to the outside of cases are a moral as well as an army must, and so are protectors to prevent the lists being torn off in transit.

Don't let another mixed shipment go without this protection!

A recent army directive requires that all cases of assorted items, having an ultimate foreign destination, have two packing lists attached to the outside. One of these lists must be covered with 3/16" plywood or .080 waterproof fibre protector. The army specification waterproof .080 fibre board protectors we make are deeply dished to accommodate papers and yet tack flat. The words packing list are deeply indented. Three sizes—immediate delivery from stock. Write, wire, or clip and mail this for prices.

WESTERN PAPER GOODS COMPANY
1322 WEST EIGHTH ST. • CINCINNATI, OHIO

INDIVIDUAL_____

FIRM_____

ADDRESS_____

▲ Mention Item NED-1734 when writing ▲

HYDRAULIC RAMS

Standard diameters.....4½ to 18 inches
Standard lengths.....2 to 40 feet

can operate by Water pressure . . . Oil pressure . . . or combination air and oil pressure

AUTOMATIC CONTROL VALVES
for HYDRO-ELECTRIC or HYDRAULIC ELEVATORS

freight or passenger
VALVE SIZES

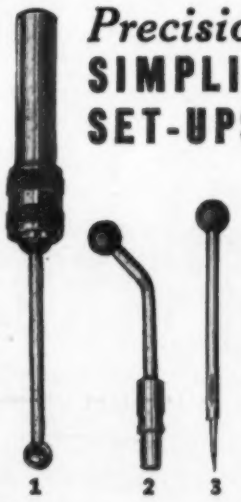
1-1/2—2—2-1/2—3 inch Valves are furnished with complete controls to meet any specific requirements. Wiring diagrams furnished with all orders.

WRITE FOR INFORMATION

Representatives Wanted

American Manufacturing Co., Inc.
2119 Pacific Ave. • Tacoma 2, Washington

▲ Mention Item NED-1735 when writing ▲



Precision Machinists!
SIMPLIFY PRECISION SET-UPS *with this*
NEEDLE-POINT UNIVERSAL WIGGLER

Accurately locates spindle center under all conditions. Eliminates complicated measurements, speeds precision work, avoids costly and embarrassing errors. A valuable tool for both new workers and experienced machinists. The only *universal* Wiggler of its kind.

1 2 3

3 PRECISION INDICATING TOOLS IN 1

HOW TO USE—1, Ball Shaft indicates from ground or machined surfaces and sides of rounds, gauge blocks, etc. Hardened and ground ball is exactly .250" dia. **2, Indicator Shaft** holds all types of indicators on shank or in hole. Permits locating from toolmakers buttons or holes on any circle from spindle center to 6" dia. **3, Needle-Point Shaft** finds centers, trues to layout lines. Needle-Point replaceable.

PRICE $2.00 COMPLETE

NORK PRODUCTS CO.
Makers of NEEDLE-POINT LINE of fine tools
5897 S. Main Street • Los Angeles 3, California

▲ Mention Item NED-1736 when writing ▲

STURTEVANT QUALITY

Immediate Delivery
$12.75
Less Wrench

SPRING TESTER

Fast, Accurate and Inexpensive

Using any accurate torque wrench as its measuring element, this inexpensive spring tester measures the recoil of springs up to 7" (free length) and 2½" in diameter when compressed to any predetermined length. As easy to "set" as a vernier scale; as easy to operate as a light arbor press; and as easy to read as a school ruler—no multiple dials, no relative readings, no complicated computations. Just pull down the torque wrench handle, and take the direct reading when the built-in tone device sounds. Enables anyone to inspect, test, check or measure the recoil of springs in a few seconds . . . to accurately match sets of springs (as valve spring of engines) in a few minutes.

Widely used for testing springs in laboratories and in heat treating, inspection, assembly and repair departments to eliminate costly guesswork in building and maintaining automotive and aircraft motors. (Note: Torque Wrench NOT INCLUDED, unless specified). *Write for Bulletin ST-22.*

P. A. STURTEVANT CO.
ADDISON ILLINOIS

▲ Mention Item NED-1737 when writing ▲

New Literature—Continued

BATTERY CONNECTORS—26-page illustrated bulletin covers line of battery connectors for aircraft, engines and general industrial uses—application photos and condensed data sheets are included—issued by Catalog Dept., Cannon Electric Development Co., 3209 Humboldt St., Los Angeles 31, Calif.

▲ Mention Item NED-1738 when writing ▲

THREAD GRINDING—6-page illustrated bulletin No. 25 contains information on thread grinding operations, samples of grinding done by Dumore method, wheel dressing and steps required to mount number 5 toolpost grinder and thread grinder attachment to lathe in preparation for thread grinding—issued by Dumore Co., Fourteenth and Racine Sts., Racine, Wis.

▲ Mention Item NED-1739 when writing ▲

POWER SHOP TRUCK—8-page illustrated bulletin shows typical applications of Buda Chore Boy platform type shop truck of ½ ton capacity—truck has 4-cycle gasoline engine and maximum speed of approximately 15 miles per hour—issued by Buda Co., 15440 Commercial Ave., Harvey, Ill.

▲ Mention Item NED-1740 when writing ▲

JACKS—28-page illustrated catalog No. 202 lists and describes jacks for all lifting, lowering, pushing and pulling operations that are being manufactured under present war-time restrictions—issued by Duff-Norton Mfg. Co., 2709 Preble Ave., N. S., Pittsburgh, Pa.

▲ Mention Item NED-1741 when writing ▲

ARC WELDING—Eight design sheets for "Practical Design for Arc Welding" file show welding plans for special machinery base, die shoe automobile welder press, base for boring mill, diesel engine crank-case, resistance welding machine base, 40 ton steel mill bed plate, steel mill gear drive cases and flying shear gear box—issued by Hobart Bros. Co., Hobart Square, Troy, O.

▲ Mention Item NED-1742 when writing ▲

COATED ABRASIVES—28-page illustrated booklet discusses coated abrasives, their component parts, manufacture and ultimate use, including information on how to identify, how to order and how to store sandpaper—illustrated by Behr-Manning Co., Troy, N. Y.

▲ Mention Item NED-1743 when writing ▲

INDUSTRIAL EQUIPMENT—45-page illustrated catalog No. 220 covers complete line of equipment for radio, electronic, automotive and aeronautical industries—includes such products as antenna, binding posts, condensers, grommets, jacks, switches, tubing, wrenches and steel cabinets—issued by Insuline Corporation of America, Insuline Bldg., 3602-35 Ave., Long Island City, N. Y.

▲ Mention Item NED-1744 when writing ▲

HYDRAULIC VALVES—38-page catalog contains information covering line of stop, check, stop and check, operating and safety relief hydraulic valves as well as accumulator control valves and large variety of special valves—issued by R. D. Wood Co., 402 Chestnut St., Philadelphia 5, Pa.

▲ Mention Item NED-1745 when writing ▲

New England Screw Co.
KEENE, NEW HAMPSHIRE

50 YEARS OF SPECIALIZED EXPERIENCE

MACHINE SCREWS — PLASTIC INSETS
SHEET METAL SCREWS — HOLDING PINS
MACHINE SCREW NUTS — SPECIAL RIVETS
ALL TYPES OF HEADS AND THREADS

▲ Mention Item NED-1746 when writing ▲

EFFICIENT DRAINAGE for compressed air lines

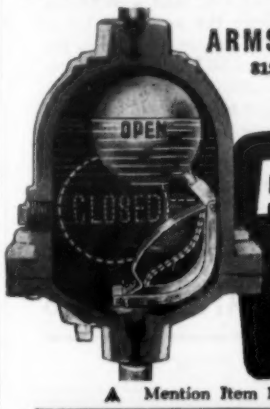
• Armstrong snap-action ball float Air Traps are widely used for efficient drainage of water from compressed air lines, separators, aftercoolers, intercoolers and receivers.

This trap has a stainless steel spring which acts over a dead center to open and close the valve with a fast snap action. No priming is required.

For service where dirt and oil conditions are bad, standard inverted bucket Armstrong traps are used for draining water from compressed air equipment.

The Armstrong Trap Book explains air and steam trapping in detail. We'll be glad to send you a copy.

ARMSTRONG MACHINE WORKS
819 Maple St. Three Rivers, Mich.



ARMSTRONG *Snap Action* AIR TRAPS

▲ Mention Item NED-1747 when writing ▲

ANSWERS to Many Pushbutton Control Problems

OUTSTANDING FEATURES
Wide choice of operating elements with one to four circuits each

Cutler-Hammer's New Wide Range Line of Heavy Duty Pushbutton Stations offers an Unlimited Variety of Functional Combinations

● Cutler-Hammer offers a line of Heavy Duty Pushbutton Stations (NEMA Type 1) with surface mounting enclosures which accommodate from 1 to 8 Cutler-Hammer new unitized pushbuttons; and with flush mounting constructions which accommodate from 1 to 3 C-H unitized pushbuttons. The line provides the widest selection of functions and combinations available today and permits these stations to be "tailored" to your exact needs.

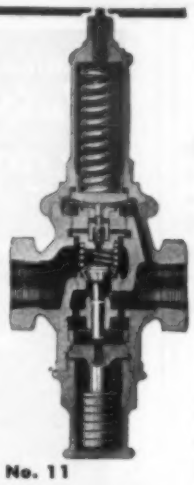
Among the many advanced engineering features are the following: one to 4 circuits for each pushbutton; wide variety of operators; big buttons for gloved-hand operation; projecting shatterproof color caps for 180° visibility; fitted "flange-seal" covers for extra sturdy and tight enclosure; rugged yet light weight construction; ample internal free space for easy wiring despite small size; no sharp corners or edges; excellent appearance; optional padlocking feature. Stations may be mounted horizontally or vertically. Write for further details today. CUTLER-HAMMER, Inc., 1377 St. Paul Ave., Milwaukee 1, Wis. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ontario.

Milwaukee Plants

CUTLER-HAMMER
MOTOR CONTROL
C-H

▲ Mention Item NED-1748 when writing ▲

For Accurate Pressure Regulation and Long Life Use MASONEILAN REGULATORS



Because Masoneilan Pressure Regulators hold pressures where you want them, they are widely used throughout industry. These valves assure accurate pressure control in spite of fluctuating initial pressure or demand. Heat treating of valve and high polish of pilot valve and seat assure dependable service and long life.

No. 11

...MASONEILAN STRAINERS

Prevent scale, dirt, chips, etc. from damaging regulators, traps, valves and pumps ... use Masoneilan Strainers. These precision-made strainers keep out all foreign matter. They'll eliminate maintenance delays and save you money.

MASON-NEILAN REGULATOR CO.

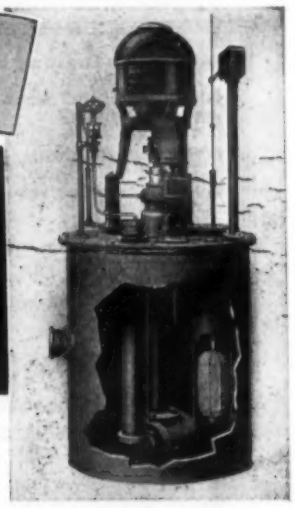
1205 ADAMS ST., BOSTON 24, MASS.

New York Philadelphia Pittsburgh Tulsa Toledo Chicago
Atlanta St. Louis San Francisco Los Angeles Houston
Mason Regulator Co., of Canada, Ltd., Montreal

▲ Mention Item NED-1749 when writing ▲

FOR YEARS OF GOOD SERVICE

YEOMANS HEAVY DUTY SUMP PUMPS



In countless installations, in every type of service, these sturdy pumps tend quietly to business—calling attention to themselves only by the troubles that never happen. Their dependable performance is built into them—a product of Yeomans experience, and careful engineering. Available for prompt delivery on proper priority.

For complete data send for Bulletin 3002

Power Plants, Boiler Houses, Sub-Stations, Cable Vaults, Steel Mills, Factories, Service Buildings, Packing Plants, Subways, Oil Refineries, Basements, Pipe Trenches, Elevator Pits, Tunnels, Chemical Plants, Ash Pits, Boiler Rooms, Manholes, Reservoirs

Special Alloys furnished for corrosive liquids.

Representatives in All Principal Cities

YEOMANS BROTHERS CO.

1447 DAYTON ST. • CHICAGO 22, ILLINOIS

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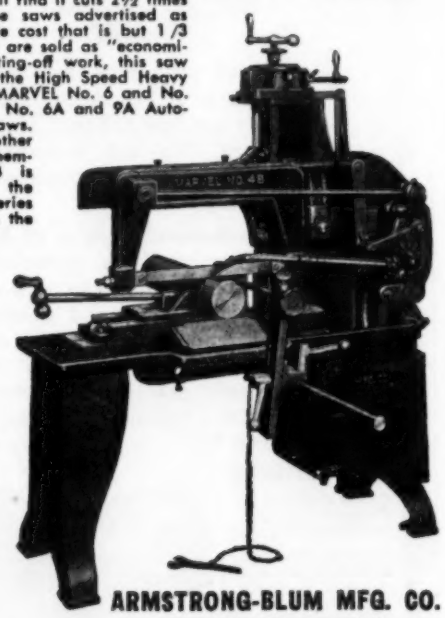
Costs About the Same ... But Cuts 2½ times as Fast, and with ⅓ the Blade Cost

Compare this moderately priced, intermittent high speed hack saw with any other metal cutting saw in its price class. Compare for speed, for accuracy, and for blade cost and operating cost. You will find it cuts 2½ times as fast as other type saws advertised as "fast," and at a blade cost that is but 1/3 of that of saws which are sold as "economical". For straight cutting-off work, this saw is surpassed only by the High Speed Heavy Duty all-ball-bearing MARVEL No. 6 and No. 9 Saws, and MARVEL No. 6A and 9A Automatic Production Saws. When you read that other saws are "FAST", remember the MARVEL 4B is FASTER, and that the MARVEL 6 and 9 series Saws are still by far, the FASTEST.



MARVEL No. 4B High Speed Hack Saw

Capacity 6" x 6"

Write for Catalog

ARMSTRONG-BLUM MFG. CO.

"The Hack Saw People"

5700 Bloomingdale Ave. Chicago 39, U.S.A.

Eastern Sales Office: 225 Lafayette St., New York

▲ Mention Item NED-1751 when writing ▲

New Literature—Continued

CENTRIFUGAL PUMPS—Four illustrated bulletins Nos. W-321-B7C, W-321-B13B, W-321-B14B and W-321-B15 contain descriptions, applications and specifications of four models of Monobloc centrifugal pumps—issued by Worthington Pump and Machinery Corp., 427 Worthington Ave., Harrison, N. J.

▲ Mention Item NED-1752 when writing ▲

pH & CHLORINE CONTROL—83-page revised combination handbook and catalog is concerned with control of pH, chlorine and phosphates in boiler water and in water analysis—issued by W. A. Taylor & Co., 7300 York Rd., Baltimore, Md.

▲ Mention Item NED-1753 when writing ▲

BRASS & ALUMINUM CASTINGS—20-page illustrated booklet takes reader on personally conducted tour through new plant—every step in producing brass and aluminum castings is pictured—issued by Manufacturers Brass Foundry Co., 7756 Dante Ave., Chicago 19, Ill.

▲ Mention Item NED-1754 when writing ▲

MATERIALS HANDLING—Seven illustrated catalogs cover full line of materials handling equipment—line includes three sizes of lift trucks, a mobile crane and three models of straddle trucks—issued by Willamette Hyster Co., 2906 N. E. Clackamas St., Portland 8, Ore.

▲ Mention Item NED-1755 when writing ▲

MANGANESE STEEL—30-page illustrated bulletin No. 1243-CP discusses use of manganese steel in clay products industry for excavating, hauling, crushing, mixing and manufacturing equipment—issued by American Brake Shoe Co., 389 E. Fourteenth St., Chicago Hts., Ill.

▲ Mention Item NED-1756 when writing ▲

WIRE ROPE—22-page illustrated pamphlet No. 43-85 contains series of bulletins on wire rope conservation—issued by Macwhyte Co., 2932 Fourteenth Ave., Kenosha, Wis.

▲ Mention Item NED-1757 when writing ▲

VALVES—6-page illustrated brochure describes line of Air Furnace malleable iron gate, globe, angle and check valves recommended for 150 pounds steam pressure at 450 degrees Fahr.—issued by Jenkins Bros., 80 White St., New York 13, N. Y.

▲ Mention Item NED-1758 when writing ▲

HYDRAULIC PRESSES—48-page illustrated bulletin No. P5H43 shows complete line of hydraulic presses with specifications and photographs of actual installations to illustrate their uses—issued by A. B. Farquhar Co., York, Pa.

▲ Mention Item NED-1759 when writing ▲

FACING ALLOYS & OVERLAY METALS—8-page illustrated catalog No. 75 is descriptive of Colmonoy hard facing alloys and overlay metals—characteristics of various types are outlined and typical applications are shown—issued by Wall-Colmonoy Corp., 720 Fisher Bldg., Detroit 2, Mich.

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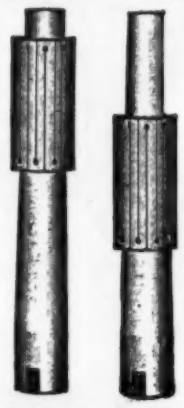
EVERY ONE A "CHAMPION"

CHAMPION

EXPANDING MANDRELS



Automatically Sizes To Accurately Fit

Reduces Mandrel Costs 2/3rd

With one Champion Expanding Mandrel you can completely and accurately fill various size holes . . . only 12 Champions required for a complete range from ½" to 6½". That's why Champions are so rapidly obsoleting old type solid mandrels in plants everywhere. In time saved quality of finished work and original investment Champion Mandrels will save you at least 2/3rd . . . and they're far more convenient.

The Only Mandrel That Completely and Accurately Fills The Hole

The WESTERN Tool and Manufacturing Co. SPRINGFIELD, OHIO

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PROMPT DELIVERIES *can now be made on most models of...*

Reactance resulting from special design gives exceptional arc stability. Remote Control insures best possible results.

***HOBART Simplified* ARC WELDERS**

Mail Your Order with PRIORITY RATING at Once!

Right now is a good time to look to the future of your business and of your product. Every change you make today will have to be considered in the competitive field tomorrow. If you have enlisted the aid of Hobart welders to accomplish those changes and to stand behind them on the production line, you'll find your product in high standing. So turn to Hobart to keep your product up-to-date in design and performance, and production at the top of the ladder.

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TROY, OHIO, U. S. A.

PLAN NOW for Post War with this new Service.

"Practical Design for Arc Welding," a remarkable service that shows you many ways in which you can use welding in redesigning your product.

Initial pages FREE!

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A Type and Size for Every Need

The extensive range of Ohmite types and sizes makes possible an almost endless variety of regular or special resistors to meet every need. Core sizes range from 2½" diameter by 20" long to 5/16" diameter by 1" long, and are available with standard or special windings, terminals and other features.

Send for Catalog No. 40

Write on company letterhead for Catalog and Engineering Manual No. 40.

OHMITE MANUFACTURING CO.
4843 Flournoy St., Chicago 44, U.S.A.

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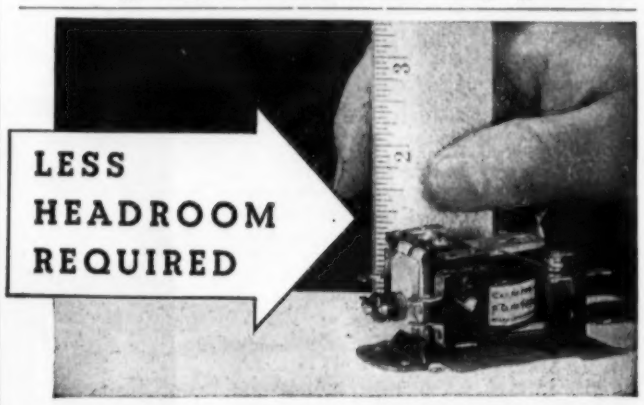

for THIS RELAY . . .

The WARD LEONARD Midget Metal Base Relay measures only 1¼" in height. Its sturdy design permits continuous service on standard AC and DC voltages up to 110-115V. This double pole, double throw relay has the silver-to-silver contacts characteristic common to all Ward Leonard Relays. Data bulletins are available describing various Ward Leonard Relays. The line is complete. Send for bulletins of interest to you.

ARMY E NAVY

WARD LEONARD

RELAYS · RESISTORS · RHEOSTATS

Electric control WL *devices since 1892.*

WARD LEONARD ELECTRIC CO., 51 South St., MT. VERNON, N. Y.

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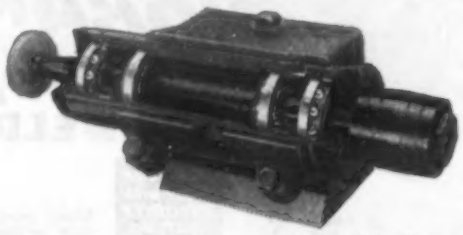
For HIGH-SPEED PRODUCTION with SUPER-PRECISION



High speed spindle mounted on Fafnir Super-Precision Ball Bearings

FAFNIR Super-Precision Ball Bearings assure the finest precision work possible—at speeds which permit maximum production.

On shafts turning 40,000-60,000 r.p.m., deflection or "play" can be measured only in the millionths.

The skill and care in manufacture that make these ball bearings possible is reflected in the quality of all Fafnir Ball Bearings. The Fafnir Bearing Company, New Britain, Connecticut.

Buy War Bonds and Stamps

FAFNIR
BALL BEARINGS

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You can effect substantial savings, and immeasurably improve the efficient life of your product, by using KENNAMETAL inserts at strategic points that are subject to inaccuracy or failure because of corrosion or wear. KENNAMETAL, a unique cemented carbide composition, is up to 250 times as wear-resisting as hard steel!

Tipped with KENNAMETAL, this micrometer is practically impervious to wear and is unaffected by ordinary causes of corrosion. Shown at the right are lathe or grinder center, tip and seat for high-pressure valve, master gage blocks, and ball and seat for pump valve—suggestive of the scores of potential applications for KENNAMETAL.

If the enduring precision of measurement or performance of your product is threatened by abrasive wear, corrosion, or erosion, call in a KENNAMETAL field engineer. Have him show you how KENNAMETAL will eliminate your trouble.

KENNAMETAL

KENNAMETAL Inc.
171 LLOYD AVE., LATROBE, PA.

SUPERIOR CEMENTED CARBIDES

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New Literature—Continued

POSTWAR CONSTRUCTION—32-page illustrated booklet is entitled, "Construction Potentials"—expresses opinion that construction industry will swing from wartime to peacetime economy without difficult conversion problems and will provide volume of activity in first postwar decade even greater than during boom following first World War—discusses various aspects of subject—issued by F. W. Dodge Corp., 119 West Fortieth St., New York, N. Y.

▲ Mention Item NED-1769 when writing ▲

EMULSION WAXES—4-page bulletin contains information on emulsion waxes available to metal treating industry—waxes are applied at room temperature and form adherent, hard, rust inhibiting films upon metal—issued by The Enthone Co., Dept. NED, 442 Elm St., New Haven, Conn.

▲ Mention Item NED-1770 when writing ▲

BALL BEARINGS—1944 edition of "Interchangeable Ball Bearings for Replacement" contains numerically arranged lists of ten competitive makes of ball bearings together with corresponding New Departure numbers—issued by New Departure Div., General Motors, Bristol, Conn.

▲ Mention Item NED-1771 when writing ▲

CHAIN DRIVES—80-page illustrated bulletin No. 43 contains information, specifications and price lists of high-speed chain drives—data is also included on other power transmission equipment such as roller chains, flexible couplings and free-wheeling clutches—issued by Morse Chain Co., 1939 Meaker St., Ithaca, N. Y.

▲ Mention Item NED-1772 when writing ▲

COOLANT PUMPS—60-page illustrated catalog is made up of seven sections each of which is devoted to particular type or accessory of Gusher coolant pumps—copies available upon request on company letterhead—issued by Ruthman Machinery Co., 1810 Reading Rd., Cincinnati 2, O.

▲ Mention Item NED-1773 when writing ▲

PLASTIC TUBE & FITTINGS—8-page illustrated bulletin No. P-8 is descriptive of Saran chemically resistant plastic tube and fittings as permanent replacement for metal and rubber in wide variety of installations—issued by Hodgman Rubber Co., Framingham, Mass.

▲ Mention Item NED-1774 when writing ▲

PORTABLE GENERATORS—11-page illustrated catalog presents information on two models of Epcon portable generators which are equipped with air-cooled gasoline-driven engines—generators deliver 110-volt, 60-cycle alternating current and serve all standard electrical equipment—issued by Electrical Products Consolidated, 1016 Virginia St., Seattle, Wash.

▲ Mention Item NED-1775 when writing ▲

SMALL BUSINESS—64-page book by Charles H. Allen is entitled, "Is Small Business Doomed?"—author endeavors to overcome danger of free enterprise being swept away by socialistic ideologies—encourages more individuals to start businesses of their own and to keep profit system virile—price per single copy is $1.00—published by B. C. Forbes Publishing Co., 120 Fifth Ave., New York 11, N. Y.

▲ Mention Item NED-1776 when writing ▲

When you want accurate and dependable automatic temperature or humidity control for Industrial Processes or Air Conditioning Systems call in a Powers engineer. With a very complete line of self-operating and compressed air operated controls we are well equipped to fill your requirements.

Write for Circular 2520

THE POWERS REGULATOR CO.
2740 Greenview Avenue, CHICAGO

Offices in 47 Cities—See your phone directory

50 Years of Temperature and ★ Humidity Control ★

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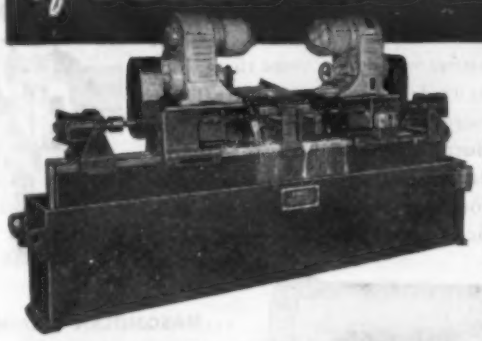
HIGH SPEED *Automatic* MACHINING of TUBES AND RODS



SERIES 400 Full Automatic Double Spindle PINES PROFILER with chute feed. Drills both ends 1¼" diam. steel rods at same time.

PINES PROFILERS

BURR • BORE • CENTER • FACE • THREAD
TURN • DRILL • CHAMFER • REAM
Both Ends Simultaneously!

Save Skilled Labor . . . Boost Production
Cut Operation and Production Costs

Phone, Wire or Write for Further Information

PINES ENGINEERING CO., INC.
640 PRAIRIE • AURORA, ILLINOIS

SPECIALISTS IN TUBE FABRICATING EQUIPMENT

▲ Mention Item NED-1778 when writing ▲

- Hydraulic Elevating Tables
- Hydraulic Lift Trucks
- Hydraulic Pallet Trucks
- Hydraulic Elevating Trucks
- Hydraulic Die-Handling Trucks
- Hydraulic Sheet-Handling Trucks
- Hydraulic Welding Positioners
- Hydraulic Stacking, Tiering, Hoisting
- Equipment
- Special Hydraulic Devices, Engineered and Developed for Unusual Applications

For the Usual or the Extraordinary

Material Handling Equipment, as

LYON-Raymond

● This LYON-Raymond Hydraulic Portable Elevating Table is available from stock. Elevates 14"; turns a full 360°. The handiest equipment in any shop.

LYON-Raymond standard material handling units are trusted standbys in thousands of plants for speeding up production operations and cutting costs. Special-purpose adaptation, developed by LYON-Raymond are doing many exceptional jobs more easily, more quickly, with greater safety—principally through ingenious use of our years of experience with hydraulic power.

Get the facts. Ask for literature on LYON-Raymond equipment for your needs, or send a description of your problem for recommendations.

LYON-Raymond Corporation
323 Madison St. Greene, N. Y.

▲ Mention Item NED-1779 when writing ▲

DIAMONDS for Victory

BIG-HED-NIBS
LOC-KEY-SET

- Three grades of diamonds. Common Quality $12 per karat. Medium quality $24 per karat. Select quality $48 per karat. (Contour template diamonds supplied only in Medium and Select quality.)

All diamond sizes ¼ to 10 karat are nib mounted for immediate shipment . . . Billed subject to approval. Specify quality of diamond wanted. We recommend a minimum size of one karat for each 6" diameter of grinding wheel. (24 hour resetting service, $1.00 postpaid.) Grinders instruction card free. *Send for Catalog.*

RE-SET-ABLE

Cooler dressing
Closer Tolerances
Micrometer Accuracy

Because: Wing key heat dissipation and absolute diamond lock nib.

The Most Complete and Up-to-the-Minute Line of Diamond Tools. Distributed thru Mill Supply Jobbers.

DIAMOND TOOL COMPANY, Not Inc.
Sheldon M. Booth, Pres.
938 E. 41st Street CHICAGO, ILL.

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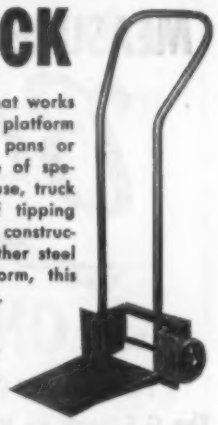
SHOVEL TRUCK



Reduce handling costs with this truck that works like a shovel—a kick of the foot slides platform under the load easily. Boxes, bags, pans or barrels cannot rub on wheels because of specially designed guards. When not in use, truck occupies small space. No danger of tipping over if accidently bumped. All-steel construction, Hyatt bearings, equipped with either steel or rubber wheels, large sturdy platform, this shovel truck is built to last a lifetime.

A SPECIAL DESIGN with shorter nose and handle is available for handling kegs in screw machine plants.

ALL-STEEL WELDED CONSTRUCTION

SCOOP TRUCK

The same sturdy construction as the shovel truck. In addition to handling boxes, cases, kegs, etc. will also handle long round or flat bar stock or similar loads normally requiring a much larger truck. Simply scoop load on. Made in three sizes: 18" x 24"—20" x 28"—24" x 30".

Either of the Above Trucks on 10-Day Approval

FISHER EQUIPMENT COMPANY
15133 LIVERNOIS ST. DETROIT 21, MICH.

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Registered U. S. Patent Office

MECHANICAL IMPROVEMENTS • INDUSTRIAL LITERATURE
NEW PRODUCTS AND MATERIALS

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WHEN IT'S OVER "OVER THERE"

IRC will be in a specially favorable position to supply *all types* of Resistance units—of high Quality and in large Quantity—and at low costs made possible by mass production.

INTERNATIONAL RESISTANCE CO.
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IRC makes more types of resistance units, in more shapes, for more applications, than any other manufacturer in the world.

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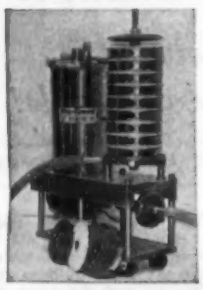
Alsop FILTERS for ALL LIQUIDS



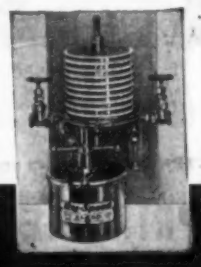
Alsop with 25 years of filtration experience, presents now a complete line of modern filters for every kind of liquid.

Exceptional filtration principle in small, compact, simply operated units, using inexpensive filter discs, to provide the complete and perfect elimination of all dirt, rust, sludge and impurities from liquids, including all oils.

Units are made in portable types with pump and motor, in stand types, and for pipe line connection.

Any capacity, for any degree of filtration desired.

The complete story of liquid filtration yours for the asking. Write today for your copy.

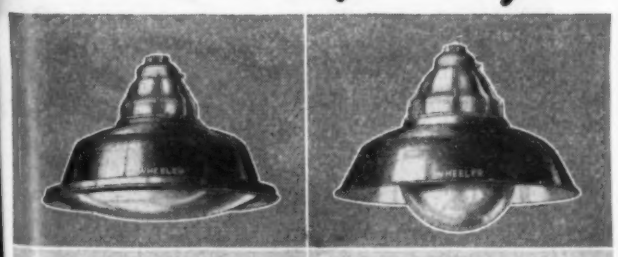


ALSOP ENGINEERING CORP.
32 Main St. Milldale, Conn.

"SEALED DISC" FILTERS

▲ Mention Item NED-1782 when writing ▲

Skilled Lighting!



Wheeler Vapolux Fixture — *Wheeler Globe-Type Unit*

for "Class II-G" Hazardous Locations

In selecting lighting fixtures for Class II, Group G locations, why not get the plus values of Wheeler "Skilled Lighting"? Wheeler Vapolux and Globe-Type Fixtures offer top efficiency in every detail. Not only Underwriter-approved, but engineered for high light output, proper heat dissipation, long service and maximum installation and maintenance ease.

Write for details of these and other units in Catalog 50. **Wheeler Reflector Company, 275 Congress St., Boston, 10, Mass.** New York City. Representatives in principal cities.

Distributed Exclusively Through Electrical Wholesalers

Wheeler REFLECTOR COMPANY
Lighting Equipment Specialists Since 1881

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Keep FLASHLIGHTS Bright ALWAYS

with **IDEAL**

Rechargeable

Flashlight STORAGE BATTERIES

Outlast 400 Dry Cells!

Replace "one time" dry cells with IDEAL *Rechargeable* Flashlight Storage Batteries. Recharge from any light socket with IDEAL Charger, and keep your flashlights bright—always. Takes place of two or more 1¼" size D Dry Cells. Can also be used in 3 and 5 cell cases.

Conserve Critical Materials

GUARANTEED SERVICE
Write for Bulletin 1242

IDEAL *Sycamore*
★ IDEAL COMMUTATOR DRESSER CO ★

1032 Park Avenue **Sycamore, Illinois**
Sales Offices in all Principal Cities
In Canada: Irving Smith Ltd., Montreal, Quebec.

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Vinylite

TRADE MARK

This Mirror-Like Finish has taken Millions of "Punches"

EIGHT YEARS AGO, several hundred industrial workers "punching" in and out four times daily subjected this time clock to severe abrasion. Scraping of thousands of perspiring, gritty hands caused the original finish to fail in less than a year's time, with subsequent corrosion of the base metal.

Seven years ago, the time clock was refinished with a VINYLITE resin coating. For more than two thousand days, the workmen have checked in and out, exposing the clock to the same wear and tear. Through literally millions of "punches", the VINYLITE resin coating still protects the metal case. In fact, it has retained its high gloss and looks as though it were freshly applied. Here is ample testimony to the exceptional wear and abrasion resistance of these modern, durable coatings.

Such coatings can be applied to metal, concrete, or wood to provide attractive appearance and long-lasting protection despite extremes of service. Our Field Engineers and Development Laboratories will help you adapt them to your essential products or equipment. Many types of VINYLITE resin finishes are available for essential service. We will be pleased to send you further information. Address Department 8, please.

Plastics Division
CARBIDE AND CARBON CHEMICALS CORPORATION
Unit of Union Carbide and Carbon Corporation
UCC
30 EAST 42ND STREET, NEW YORK 17, N. Y.

Plastics

▲ Mention Item NED-1786 when writing ▲

C-F POSITIONERS

Automatic Welding . . . with C-F POSITIONERS

—is possible on many jobs if you have a C-F Welding Positioner. Coming in 9 sizes (capacities to 30,000 lbs.) tables tilt to 135° beyond horizontal and rotate 360°, under push button control. Exclusive C-F Variable-Speed control gives table rotations ranging down to 0 r.p.m. for all sizes.

All C-F Positioners are multi-purpose tools equally efficient on either job or production welding.

WRITE FOR BULLETIN WP-22

CULLEN-FRIESTEDT CO.
1304 SOUTH KILBOURN AVENUE CHICAGO, ILLINOIS

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Finger-Tip Control . . .

OF INFINITE SPEEDS WITHIN A 16 TO 1 RANGE

COMPARE WORTHINGTON'S ALLSPEED with any other drive

- SPEED RATIO . . . highest in its price range
- STEPLESS CONTROL . . . instantaneous action
- OPERATING EASE . . . finger-tip control without stopping motor
- AUTOMATIC POSITIVE BELT-TENSIONING . . . exclusive
- COMPACTNESS . . . smallest in its field
- VERSATILITY . . . can be installed in any position . . . used with any standard 1725 to 1800 R.P.M. Motor . . . operates in either direction . . . employs V-Belt, Flat Belt or Direct Connection.

Ask our nearest District Office or Authorized Dealer for Bulletin V1400-B10

WORTHINGTON BEHIND THE NAME

MV4-5

WORTHINGTON PUMP AND MACHINERY CORPORATION
Standard Products Division, Harrison, N. J.

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Keep Drains Clear and BLAST THE AXIS

with "TNT" (Grease) trapped by ZURN GREASEPTORS

Connected to drains adjacent to sinks and other fixtures, Zurn Greaseptors save manpower and needless expense by keeping drains clear, and at the same time help to win the war—by intercepting, separating, and recovering waste grease for the making of explosives. Thousands in use in military cantonments, restaurants, hotels, institutions. Average recovery in restaurants 14 pounds per 1,000 meals. Easily installed, on or below floor, by plumbing contractor or maintenance man. Three convenient sizes—capacities, 25, 18 and 12 gallons per minute. Send coupon for complete information.

Zurn Greaseptors are approved under War Department Specification for Theater of Operations (Modified) and Mobilization Construction Equipment, PE-620

J. A. ZURN MFG. CO., Sales Office and Factory, Erie, Pa.

ZURN BUILDING • PLUMBING DRAINAGE PRODUCTS

J. A. ZURN MFG. CO., Dept. NED, Erie, Pa. Form 44-25

We are interested in avoiding drain troubles and aiding the war effort. Please send new folder giving complete information on Zurn Greaseptors.

Name_____ Firm _____

Address_____

City_____ State_____

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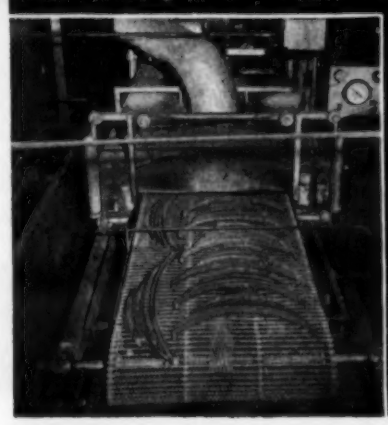
CAMBRIDGE BELTS for TEMPERING SPRINGS



also for ANNEALING BRAZING TEMPERING SOLDERING HARDENING all types of metal parts

CAMBRIDGE DRIVE CHAIN Belts are specially designed for Tempering Springs as well as handling all types of metal parts. Shown above, a Cambridge belt equipped with four strands of promal pintle chain carrying springs through a temperature of 1050°F to permit complete penetration of heat. Tempering bath follows. This belting also available with chains of detachable or roller type. Send for FREE CATALOG.

THE CAMBRIDGE WIRE CLOTH CO.
CAMBRIDGE 13, MARYLAND

▲ Mention Item NED-1789 when writing ▲

MEASURE Both VOLTS and AMPS with ONE INSTRUMENT

Type AK-1 Accuracy 3%

The G-E Hook-on Volt-ammeter

You get double value from this handy, portable a-c instrument—it will measure up to 600 volts and up to 600 amps.

It is operated simply by a *push* and a *pull* on the handle. Thus, an extension pole can be used for protection from high-voltage circuits.

Heavy-duty construction makes it especially popular among maintenance engineers, plant electricians, and trouble shooters. The carefully designed dovetail joint on the clamp reduces errors caused by imperfect closing to less than 2 per cent.

Bulletin GEA-2950 gives complete details, prices, and many helpful suggestions for operating this versatile instrument. *General Electric Company, Schenectady, N. Y.*

GENERAL ELECTRIC

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HERE'S THE MOST PRACTICAL SHOP STOOL ON THE MARKET!

It Swivels! It's Adjustable!

IMMEDIATE DELIVERY

Model SW-36 Seat Height adjustable to 24, 26, 28 and 30 inches

• Here's a sturdy, rugged, heavy duty stool designed to meet ALL factory requirements. It's adjustable to four heights . . . it's built to stand rough treatment and the large comfortable swivel seat enables workers to perform their jobs quickly and efficiently. The "corrective" back rest preserves needed energy for fatigue periods.

• SEND FOR OUR CATALOG featuring swivel and stationary stools with adjustable backs. We build a stool to cover every factory need. Highest quality! and our prices beat all competition.

ATTENTION Jobbers and Salesmen! Some territories now available. Write for details.

SPRINGFIELD FURNITURE WORKS
502 West Euclid Avenue, Springfield, Ohio

▲ Mention Item NED-1791 when writing ▲

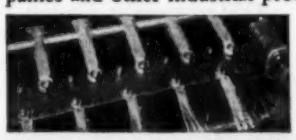
RIGHT ON THE MONEY
here's proof of proper torquing

the Chapman Torque Calibrator distributed by Tubing Seal-Cap Inc. measures torque within *1 inch-ounce*. Each Livermont Torq-Stop Wrench is set and tested for accuracy on this precision scale to a point where the beam balances. Wrench must not break beam with the addition of small weight. In this case a five cent piece.

TORQUING "RIGHT ON THE MONEY"
with the world's easiest-to-use torque wrench—a recommended S.A.E. standard

Now nuts, bolts, clamps and fittings can be tightened to their safe, proper torque "right on the money" by unskilled help.

The accurate, sturdy, compact Livermont Torq-Stop Wrench is a production line tool that increases output, assures correct torquing. No dials, no batteries—nothing to watch. Gives an audible "click" and a definite physical sensation is transferred to operator's palm when proper torque is reached. Used by aircraft companies and other industrial production plants. S.A.E. dimensions.



10,000 OPERATIONS BEFORE FINAL APPROVAL. This is the Livermont Torq-Stop Break-In Table. Each Wrench after being set to its proper torque is operated through 10,000 consecutive cycles.

Send today for 36 page illustrated Aircraft Tubing Manual.

Tools Are Weapons—Treat 'Em Right.

LIVERMONT *torq-stop* WRENCH
Sold by TUBING SEAL-CAP INCORPORATED
215 West Seventh Street Los Angeles, 14, California
Eastern Representative: 428 New Center Building, Detroit, Michigan

▲ Mention Item NED-1792 when writing ▲

Stop "Breaking the Backs" of men in your factory!

(Model 30.11A)

Bend rods, press bushings, move machines, lift heavy loads, etc., quicker and easier with Hein-Werner Hydraulic Jacks.

Model 30.11A (illustrated) incorporates an entirely new arrangement of *dual operated* speed pumps—making this 30 ton capacity jack unusually fast and easy operating.

Hein-Werner also makes other jacks of 3, 5, 8, 12 and 20 tons capacity... For details, consult your nearest industrial supply distributor, or write us.

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

HEIN-WERNER HYDRAULIC JACKS
Are Built Right and Priced Right

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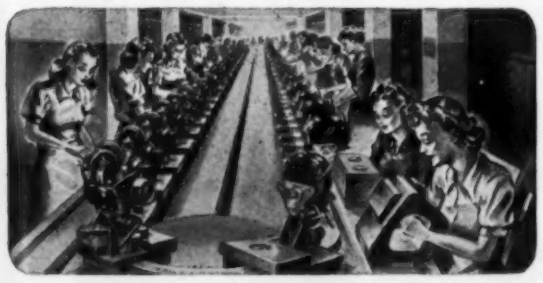
To PRODUCTION MEN... wrestling with the manpower problem...

SEND FOR THIS BOOKLET

explaining a new system of planned production

To combat today's manpower problem you need this efficient NEW TOOL called "Co-ordinated Control"—a system of planned production in which Lamson Conveyors keep materials moving with a minimum of handling, while an interlocking network of Lamson Dispatch Tubes delivers orders, time tickets, blueprints, small tools, at the right point at the right time.



● *Lamson Conveyors installed in a busy war plant cut the time required to manufacture magneto coils for aircraft from 40 to 15 minutes.*

LAMSON

CONVEYORS and TUBES

Tools for Co-ordinated Control

LAMSON CORPORATION
4010-4040 Lamson St., Syracuse 1, N. Y.

☐ Send me a copy of your "Co-ordinated Control" booklet.

Name ..... Position .....

Company .....

Address ..... State .....

Because of the paper shortage, this booklet can be sent only to those who name their Company and Position.

▲ Mention Item NED-1794 when writing ▲

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Precision Small Parts you can trust with your life

NO job for amateurs, making these Lycoming R-680 aircraft engine cam followers and cam follower guides of alloy steel on a war-quantity basis. Clearance between walls of follower and guide must be held between .0013 and .0003 inch—and the mating diameters are ground and honed to a 10 micro-inch finish, a mere 10 millionths of an inch! *And they've got to be interchangeable—they're not factory paired.* You'll need Western Automatic's production ingenuity, skilled workmen and vast precision equipment after the war. We suggest that you write us for complete facts *now.*

Western Automatic Machine Screw Co.
★ Elyria, Ohio, U. S. A. ★

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Correctly designed metal stampings provide the fabricator with superior parts that are usually more economical than parts formed in other ways.

Symmetry of line, balance, and length of performance are attributes of good design. Cold working of metals suitable for stamping increases their strength—usually without over-stressing, but such over-stressing can readily be relieved. Practically all stampings are designed to develop strength, lessen weight, assure uniform section thickness and improve appearance.

Smoothness of surface which requires little or no finishing, and the broad choice of materials, makes stamping particularly applicable to a wide range of products. Commercial can form stampings from steel, stainless steel, Monel metal, aluminum, copper and copper alloyed metals and clad metals.

At Commercial, your problem will be handled by engineers and workmen thoroughly familiar with tool and die design and production equipment and methods that assure quality work in quantity production.

While quantity production usually makes for lower unit cost it is not necessary in connection with Commercial stampings, as they have a number of standard shapes available without die charges.

Send us details of your problem today . . . our engineers are at your service. **The Commercial Shearing & Stamping Co.**, Tod Lane, Youngstown, Ohio. —Advt.

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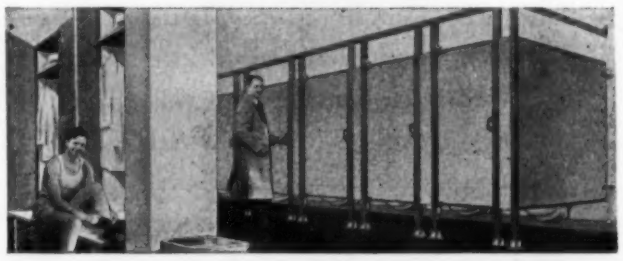
A-PE-CO *"Photo Exact"* ..COPIES MADE FAST BY ANYONE, ANYTIME

PHOTO-COPYER $55.00

▲ Mention Item NED-1797 when writing ▲

Bothered By Grievances?
KEEP TOILET ROOMS AT SUNDAY BEST
. . . Houseclean Now!



*Sanymetal** **ASBESTOS-BOARD**
TOILET COMPARTMENTS

Inadequate or unsanitary toilet rooms imperil physical fitness of workers, lead to irritation and resentment. Forestall bad feeling by replacing old, dirty compartments and fixtures, cleaning walls and floors, improving light and ventilation. Sanymetal Asbestos-Board Toilet Compartments give a lift to factory toilet rooms, encourage orderliness and promote good feeling.

SAVE TIME AND MONEY BY INSTALLING SANYMETAL TOILET COMPARTMENTS: One order, one priority covers everything you need for completing installation of toilet compartments, even complete door hardware and partition fittings. Sanymetal Toilet Compartments are economically designed and built by specialists with over 28 years' experience. Durable and rigid installation provided by laminated cement asbestos-board which affords a strong structure resistant to fire, wear and moisture, free from dirt-collecting pockets and ledges; easy to keep clean. Write for Bulletin No. 940 for complete data on Sanymetal Asbestos-Board Toilet Compartments. For quick action, see "Partitions" in your phone book for Sanymetal Representative. Special toilet room modernizing check list available on request.

THE *Sanymetal PRODUCTS CO., INC.** 1719 Urbana Rd. Cleveland, Ohio

* TRADE MARK REG. U. S. PAT. OFF.

▲ Mention Item NED-1798 when writing ▲

The a.c.f. Berwick No. 2 Type "C" Horizontal Heater is equipped with air-pressure, water-cooled electrodes. The heat is determined by the degree at which solder will flow.

FASTER SOLDERING and a SOUNDER JOINT with the a.c.f. Berwick Electric Soldering Heater

Heating the piece to be soldered to the temperature at which the solder flows, gives a cleaner, stronger soldered joint. The No. 2 Type "C" a.c.f. Berwick Horizontal Electric Heater heats *quickly;* to 350°F. for soft solder, to 1350°F. for silver solder.

To solder a tube to a gage body, the body is placed between the electrodes and spot-heated to desired temperature in a few seconds. The tube is placed against the body, and the solder applied. This immediately melts, and flows to form a clean, strong joint.

Write us your soldering problems. Send samples to solder for your inspection and comparison.

AMERICAN CAR AND FOUNDRY COMPANY
30 CHURCH STREET, NEW YORK, N. Y.
CHICAGO DETROIT ST. LOUIS

▲ Mention Item NED-1802 when writing ▲

PROMPT DELIVERY OF MODEL S-10 PRECISION TIMERS

For Measuring and Indicating Elapsed-Time Intervals Accurately to 1/50th Second.

ALL OUR Timers have an Electro-Magnetic Clutch and Instantaneous Reset to Zero, and are Synchronous Motor Driven. They will, if desired, integrate consecutive time intervals.

At present, orders (with satisfactory priority) for timers with speeds of 1 revolution per 10 seconds, or slower, are filled from stock or within 30 days. Bulletin 121 describes standard models.

Address NED-16

THE STANDARD ELECTRIC TIME CO.
"Split-Second Measurement by Standard"
SPRINGFIELD, MASSACHUSETTS

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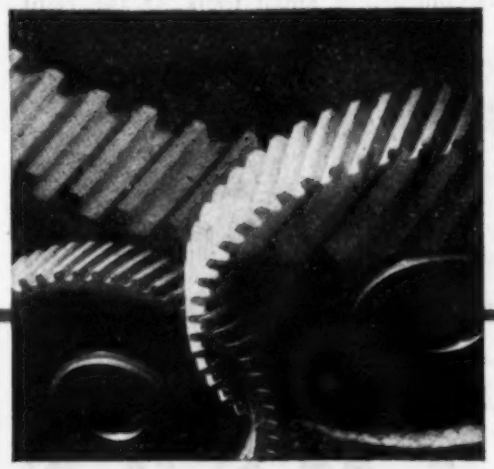

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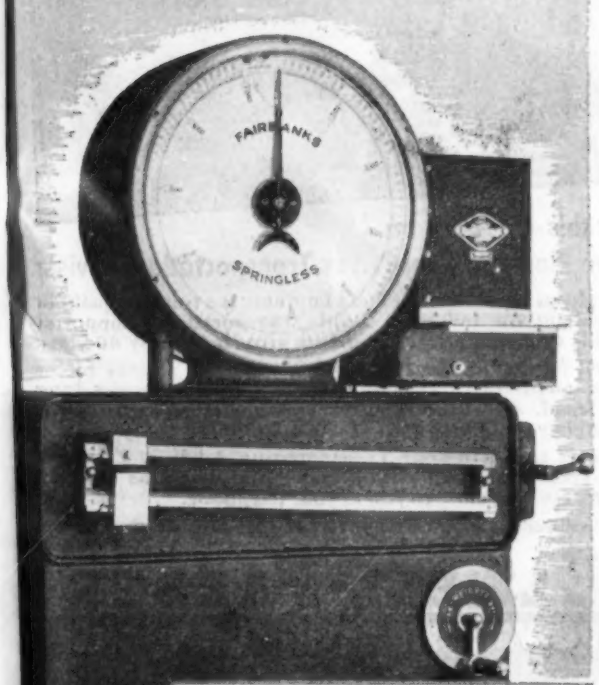

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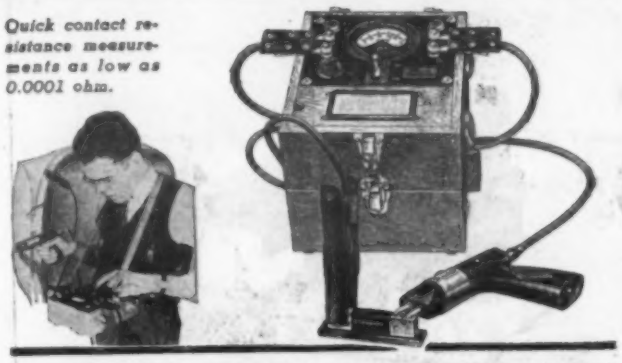

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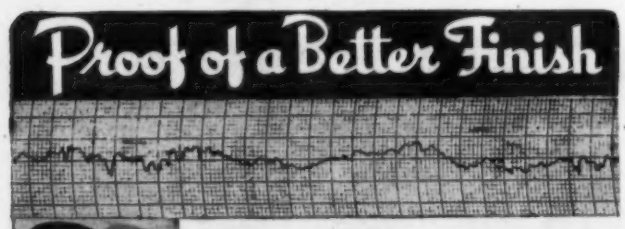

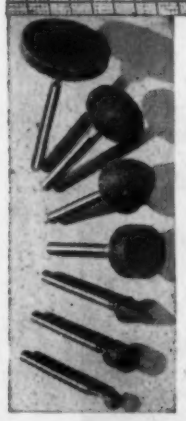

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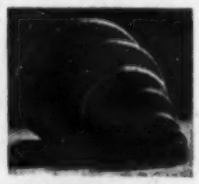

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MUSIC IN INDUSTRY—16-page illustrated booklet is entitled "Manpower, Music and Morale"—shows how internal broadcasting system is direct communication line to each employe and how plant broadcasting helps build morale, saves time, simplifies administration and improves efficiency—issued by RCA Victor Div., Radio Corporation of America, Camden, N. J.

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ARC WELDING CAST IRON—10-page illustrated booklet is entitled, "4 Ways to Salvage, Reclaim and Conserve Iron Castings by Electric Arc Welding"—emphasizes that procedure and welding material for specific application should be based on requirements of finished job—issued by C. E. Phillips & Co., 2750 Poplar St., Detroit, Mich.

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ELECTRIC AIRCRAFT MOTORS—28-page illustrated booklet covers line of electric aircraft motors—motors are small and light, yet ruggedly built to withstand severe service demanded of combat aircraft—issued by The Emerson Electric Mfg. Co., 1824 Washington Ave., St. Louis 3, Mo.

▲ Mention Item NED-1820 when writing ▲

FLOW METERS—20-page illustrated reprint No. 29 is entitled "Flow Meter Engineering"—booklet tells why, when and where flow meters and instruments are needed in modern plant and how they can be made to further war effort—issued by Cochrane Corp., 3143 N. Seventeenth St., Philadelphia, Pa.

▲ Mention Item NED-1821 when writing ▲

SUCTION & AIR PRESSURE SYSTEMS—4-page illustrated aviation accessory design check chart No. 8 describes Eclipse suction system for vacuum operated flight instruments and air pressure system for De-Icer system operation—shows applications, performance and design information and specifications—issued by Eclipse-Pioneer Div., Bendix Aviation Corp., Williams Ave., Teterboro, N. J.

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WEIGHT OPERATED TRAP—2-page illustrated bulletin No. 341 describes model JR weight operated trap for automatically draining water and oil from compressed air intercoolers, aftercoolers, separators, receivers and similar equipment—issued by W. H. Nicholson & Co., 162 Oregon St., Wilkes Barre, Pa.

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